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REPORT OF THE WORKING GROUP ON ELECTRONIC COMMERCE ON THE WORK OF ITS THIRTY-FOURTH SESSION (Vienna, 8-19 February 1999)

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INTRODUCTION

1. The Commission, at its twenty-ninth session (1996), decided to place the issues of digital signatures and certification authorities on its agenda. The Working Group on Electronic Commerce was requested to examine the desirability and feasibility of preparing uniform rules on those topics. It was agreed that the uniform rules to be prepared should deal with such issues as: the legal basis supporting certification processes, including emerging digital authentication and certification technology; the applicability of the certification process; the allocation of risk and liabilities of users, providers and third parties in the context of the use of certification techniques; the specific issues of certification through the use of registries; and incorporation by reference.¹

2. At its thirtieth session (1997), the Commission had before it the report of the Working Group on the work of its thirty-first session (A/CN.9/437). The Working Group indicated to the Commission that it had reached consensus as to the importance of, and the need for, working towards harmonization of law in that area. While no firm decision as to the form and content of such work had been reached, the Working Group had come to the preliminary conclusion that it was feasible to undertake the preparation of draft uniform rules at least on issues of digital signatures and certification authorities, and possibly on related matters. The Working Group recalled that, alongside digital signatures and certification authorities, future work in the area of electronic commerce might also need to address: issues of technical alternatives to public-key cryptography; general issues of functions performed by third-party service providers; and electronic contracting (A/CN.9/437, paras. 156-157).

3. The Commission endorsed the conclusions reached by the Working Group, and entrusted the Working Group with the preparation of uniform rules on the legal issues of digital signatures and certification authorities (hereinafter referred to as "the Uniform Rules").

4. With respect to the exact scope and form of the Uniform Rules, the Commission generally agreed that no decision could be made at this early stage of the process. It was felt that, while the Working Group might appropriately focus its attention on the issues of digital signatures in view of the apparently predominant role played by public-key cryptography in the emerging electronic-commerce practice, the Uniform Rules should be consistent with the media-neutral approach taken in the UNCITRAL Model Law on Electronic Commerce (hereinafter referred to as "the Model Law"). Thus, the Uniform Rules should not discourage the use of other authentication techniques. Moreover, in dealing with public-key cryptography, the Uniform Rules might need to accommodate various levels of security and to recognize the various legal effects and levels of liability corresponding to the various types of services being provided in the context of digital signatures. With respect to certification authorities, while the value of market-driven standards was recognized by the Commission, it was widely felt that the Working Group might appropriately envisage the establishment of a minimum set of standards to be met by certification authorities, particularly where cross-border certification was sought.²

5. The Working Group began the preparation of the Uniform Rules at its thirty-second session on the basis of a note prepared by the Secretariat (A/CN.9/WG.IV/WP.73).

6. At its thirty-first session (1998), the Commission had before it the report of the Working Group

on the work of its thirty-second session (A/CN.9/446). The Commission expressed its appreciation of the efforts accomplished by the Working Group in its preparation of draft Uniform Rules on Electronic Signatures. It was noted that the Working Group, throughout its thirty-first and thirty-second sessions, had experienced manifest difficulties in reaching a common understanding of the new legal issues that arose from the increased use of digital and other electronic signatures. It was also noted that a consensus was still to be found as to how those issues might be addressed in an internationally acceptable legal framework. However, it was generally felt by the Commission that the progress realized so far indicated that the draft Uniform Rules on Electronic Signatures were progressively being shaped into a workable structure.

7. The Commission reaffirmed the decision made at its thirty-first session as to the feasibility of preparing such Uniform Rules and expressed its confidence that more progress could be accomplished by the Working Group at its thirty-third session (New York, 29 June-10 July 1998) on the basis of the revised draft prepared by the Secretariat (A/CN.9/WG.IV/WP.76). In the context of that discussion, the Commission noted with satisfaction that the Working Group had become generally recognized as a particularly important international forum for the exchange of views regarding the legal issues of electronic commerce and for the preparation of solutions to those issues.²⁷

8. The Working Group continued revision of the Uniform Rules at its thirty-third (July 1998) session on the basis of a note prepared by the Secretariat (A/CN.9/WG.IV/WP.76). The report of that session is contained in document A/CN.9/454.

9. The Working Group on Electronic Commerce, which was composed of all the States members of the Commission, held its thirty-fourth session in Vienna from 8 to 19 February 1999. The session was attended by representatives of the following States members of the Working Group: Argentina, Australia, Austria, Brazil, Burkina Faso, Cameroon, China, Colombia, Egypt, Finland, France, Germany, Honduras, Hungary, India, Iran (Islamic Republic of), Italy, Japan, Mexico, Nigeria, Paraguay, Romania, Russian Federation, Singapore, Spain, Thailand, United Kingdom of Great Britain and Northern Ireland, and the United States of America.

10. The session was attended by observers from the following States: Angola, Belarus, Belgium, Bolivia, Canada, Croatia, Cuba, the Czech Republic, Georgia, Guatemala, Indonesia, Ireland, Kuwait, Lebanon, Morocco, the Netherlands, New Zealand, Poland, Portugal, the Republic of Korea, Saudi Arabia, Slovakia, South Africa, Sweden, Switzerland, Turkey, and Uruguay.

11. The session was attended by observers from the following international organizations: United Nations Conference on Trade and Development (UNCTAD) United Nations Economic Commission for Europe (UN/ECE), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Industrial Development Organization (UNIDO), African Development Bank, European Commission, Organisation for Economic Cooperation and Development (OECD), Asian Clearing Union, European Law Student Association (ELSA) International, International Association of Ports and Harbors (IAPH), International Bar Association (IBA), International Chamber of Commerce (ICC), International Telecommunications User Group (INTUG), Internet Law and Policy Forum (ILPF), Society for Worldwide Interbank Financial Telecommunications (S.W.I.F.T), and *Union internationale des avocats* (UIA).

12. The Working Group elected the following officers:

Chairman: Mr. Jacques GAUTHIER (Canada, elected in his personal capacity);

Vice-Chairman: Mr. PANG Khang Chau (Singapore);

Rapporteur: Mr. Louis-Paul ENOUGA (Cameroon).

13. The Working Group had before it the following documents: provisional agenda (A/CN.9/WG.IV/WP.78); two notes by the Secretariat containing revised draft uniform rules on electronic signatures (A/CN.9/WG.IV/WP.79 and 80); and the note by the Secretariat prepared for the thirty-third session of the Working Group (A/CN.9/WG.IV/WP.76), for continuation of the discussion on the issues of recognition of foreign electronic signatures (draft articles 17 to 19).

14. The Working Group adopted the following agenda:

1. Election of officers.
2. Adoption of the agenda.
3. Legal aspects of electronic commerce: draft uniform rules on electronic signatures.
4. Other business.
5. Adoption of the report.

I. DELIBERATIONS AND DECISIONS

15. The Working Group discussed the issue of electronic signatures on the basis of the notes prepared by the Secretariat (A/CN.9/WG.IV/WP.76, 79 and 80). The deliberations and conclusions of the Working Group with respect to those issues are reflected in section II below. The Secretariat was requested to prepare, on the basis of those deliberations and conclusions, a set of revised provisions, with possible variants, for consideration by the Working Group at a future session.

II. DRAFT UNIFORM RULES ON ELECTRONIC SIGNATURES

A. GENERAL REMARKS

16. At the outset, the Working Group exchanged views on current developments in regulatory issues arising from electronic commerce, including adoption of the UNCITRAL Model Law on Electronic Commerce, electronic signatures and public key infrastructure (hereinafter referred to as "PKI") issues in the context of digital signatures. These reports, at the governmental, inter-

governmental and non-governmental levels, confirmed that addressing electronic commerce legal issues had become increasingly recognized as important for the facilitation and implementation of electronic commerce and the removal of barriers to trade. It was reported that several countries had introduced recently, or were about to introduce, legislation either adopting the Model Law or addressing related electronic commerce facilitation issues. A number of these legislative proposals also dealt with electronic- (or in some cases, specifically digital-) signature issues. Other countries had established policy working groups, a number in close association with private sector interests, which were working on the need for legislative changes to facilitate electronic commerce, actively considering adoption of the Model Law and preparing necessary legislation, working on electronic signature issues including the establishment of public key infrastructures or other projects on closely related matters.

17. The Working Group commenced its consideration of the Uniform Rules by recalling the desirability and feasibility of preparing rules on electronic signatures and the need to work towards harmonization of the law in that area (see above, para. 7). It was pointed out that a number of references had been made to work being undertaken on specifically digital signatures and the diversity of laws appearing on this particular signature technique underlined the importance of harmonization. It was also pointed out that while the principles of technology neutrality and media neutrality underpinned the Model Law, in the draft Uniform Rules which addressed a number of different signature techniques, following these principles created a tension. While there was general agreement that consistency between the Model Law and the Uniform Rules should be ensured, it was recognized that drafting provisions which attributed specific legal effects to these various types of signature techniques required a balance which might be difficult to achieve. It was suggested that the Uniform Rules should focus upon: uses of signatures, which might include looking specifically at issues of functional equivalence for an "enhanced" or high-level signature; the consequences of the use of various signature techniques on the parties involved, including the conduct of those parties (rather than trying to establish a link between any specific legal consequence and the use of any specific electronic signature technique); and issues of cross-border recognition.

18. The view was expressed that the relationship between article 7 of the Model Law and the draft Uniform Rules needed to be further clarified. The necessity and desirability of building upon article 7 were questioned and it was pointed out that providing a single shortcut to satisfaction of the very flexible requirement in article 7(1)(b) that the method of identification used be "as reliable as appropriate for the purpose for which it was used" might prove difficult. Reference was made to the diversity of the matters listed in the Guide to Enactment (see para. 58 of the Guide to Enactment of the UNCITRAL Model Law on Electronic Commerce) as relevant to any consideration of the purpose for which the method was used. It was recalled that the Working Group had considered this issue on a number of occasions in its previous deliberations and the current draft of the Uniform Rules left this issue to be resolved. A further concern was expressed that considering a rule on what types of signature techniques might satisfy the requirement in article 7 might lead to a rule which could be construed as having a very narrow sphere of application in relation to commercial transactions (which generally were not required to satisfy any particular rules of law as to form of transactions).

19. The question of what form the draft Uniform Rules might take was raised and the importance of considering the relationship of the form to the content was noted. Different approaches were

suggested as to what the form might be, which included contractual rules, legislative provisions, or guidelines for States considering enacting legislation on electronic signatures. The relationship of the Uniform Rules, as legislative provisions, to the Model Law was also raised in the context of the consideration of form. It was recognized that the discussion in the Working Group on the use of various signature techniques had been particularly helpful in advancing understanding of the relevant issues and that the Working Group documents provided a good outline of the basic concepts. Pending a final decision as to the relationship between the Uniform Rules and the Model Law, overall preference was expressed in the Working Group for dealing with the Uniform Rules as a separate instrument.

20. With respect to the scope of the Uniform Rules, it was generally felt that consumers should not be dealt with specifically in the Uniform Rules. Nevertheless, since there might be cases where the Uniform Rules might prove to be useful to consumers, the suggestion was made that the formulation set out in footnote ** to article 1 of the Model Law could be adopted. A further suggestion was that, in any event, the scope of consumer transactions covered by the Uniform Rules should be limited to commercial transactions as described in footnote *** to article 1 of the Model Law (for continuation of the discussion, see below, paras. 56 and 70).

21. The Working Group was of the view that the draft of the Uniform Rules contained in document A/CN.9/WG.IV/WP.80 (in this report referred to as WP.80) constituted a more acceptable basis for discussion than that contained in document A/CN.9/WG.IV/WP.79 (in this report referred to as WP.79). It was pointed out that it might be helpful for the Working Group to consider WP.79 once it had completed its consideration of WP.80 in order to gauge whether there were any further issues which might need to be addressed.

B. CONSIDERATION OF DRAFT ARTICLES

Article A. Definitions

22. The text of draft article A as considered by the Working Group was as follows:

“For the purposes of these Rules:

“(a) ‘Electronic signature’ means data in electronic form in, affixed to, or logically associated with, a data message, and [that may be] used to [identify the signature holder in relation to the data message and indicate the signature holder’s approval of the information contained in the data message].

“(b) ‘Enhanced electronic signature’ means an electronic signature which [is created and] can be verified through the application of a security procedure or combination of security procedures that ensures that such electronic signature:

(i) is unique to the signature holder [for the purpose for][within the context in] which it is used;

(ii) can be used to identify objectively the signature holder in relation to the data message;

(iii) was created and affixed to the data message by the signature holder or using a means under the sole control of the signature holder.

“(c) ‘Signature holder’ means a person by whom, or on whose behalf, an enhanced electronic signature can be created and affixed to a data message.

“(d) ‘Information certifier’ means a person or entity which, in the course of its business, engages in [providing identification services] [certifying information] which [are][is] used to support the use of enhanced electronic signatures”.

Subparagraph (a) - Definition of “electronic signature”

23. Approaching the issue of the definition of electronic signature from a broad perspective, it was suggested that such a definition was superfluous, since the concept of electronic signature was well known and understood. Another view was that the term “signature” should not be used, since it suggested that a definition of the legal concept of a signature was being provided, whilst the Uniform Rules were merely aimed at regulating the use of certain types of technology. Electronic signature, like digital signature, was a technical concept and should not be used as a legal term indicating legal effect. Yet another view was that no definition was needed since the notion of “electronic signature” was sufficiently explained in article 7 of the Model Law.

24. In response, it was pointed out that “electronic signature” could not be merely a technical term, since it did not refer to any particular signature technique, but was intended to provide a link between a variety of techniques and the legal notion of a signature. As to whether article 7 of the Model Law sufficiently covered the matter of the definition of a “signature” in an electronic environment, it was pointed out that article 7 did not contain a definition. Article 7 was geared towards providing a functional-equivalence rule for a range of situations where technical devices were used to produce substitutes for traditional hand-written signatures. It was widely felt that the need for the definition of “electronic signature” should be addressed in terms of the structure of WP.80. It was pointed out that a definition was needed both because an electronic signature was given legal effect in draft article B, and in order to be able to construct a definition of enhanced electronic signature. After discussion, it was generally agreed that a definition of “electronic signature” should be included. However, a view was expressed that a definition was not necessary because no legal effect would be attached to it see below, para. 48).

25. Various suggestions were made as to how the definition of “electronic signature” might be improved. One suggestion, which was widely supported, was that the square brackets should be removed from the words “that may be”. It was generally felt that the definition should not cover only the case where an electronic signature was effectively used, but also point to its availability as a technical signing device.

26. Another suggestion was that the use of the term “approval” was too subjective and conducive

to uncertainty as it depended on the intentions of the signer at the time of signing. It was suggested that a more objective wording should be used and the following text was proposed as an alternative, based upon a draft directive of the European Parliament and Council on a common framework for electronic signatures:

"Electronic signatures means data in electronic form attached to, or logically associated with, other electronic data and which serves as a method of authentication."

27. In response to that suggestion, it was pointed out that the use of the word "approval" did not necessarily imply any assessment of the subjective intent of the signer with respect, for example, to the contractual or other legal effects of the message. Instead, it was limited to associating the signer with the message, which was a necessary element of most existing definitions of any type of signature, as illustrated by the use of the notion of "approval" in article 7 of the Model Law. The suggested alternative was not adopted by the Working Group.

28. With a view to reflecting some of the views and concerns that had been expressed in the discussion, it was suggested that the elements necessary to define an electronic signature might be expressed more clearly along the following lines:

"Electronic signature" means data in electronic form which:

- (a) is included in, attached to or logically associated with a data message;
- (b) is provided by a signer as a means of identifying himself;
- (c) is used by a signer to indicate his approval of the information in the data message;
and
- (d) can be used to verify that identification".

29. It was pointed out that the suggested changes were intended to clarify: firstly, that while the data constituting the electronic signature should be provided as a means of identifying the signer, the actual use of the data for that purpose might not occur until some time after the signature had been created; and secondly, that verification could be done by the recipient, the signer or by a third party, but that verification of the means of identification had to be possible. However, in the light of earlier comments about the word "approval", a suggestion was made to delete subparagraph (c).

30. While some support was expressed in favour of the suggested text, doubts were expressed about the need for subparagraph (d). Subparagraph (d) implied the possible involvement of third parties in the verification of the signature and was thus outside the scope of the actual signature. In addition, subparagraph (d) might not be needed in the context of the general category of electronic signature, since that category might include types of signature where verification would have little meaning.

31. It was suggested that, in order to align the definition in WP.80 with article 7 of the Model Law, the words "electronic form in, affixed to, or logically associated with, a data message, and" should be replaced with "any method in relation to a data message" as follows:

"Electronic signature means any method in relation to a data message that may be used to [identify the signature holder in relation to the data message and indicate the signature holder's approval of the information contained in the data message]".

32. After discussion, the Working Group decided that the definition contained in subparagraph (a) should be retained with all square brackets removed. It was also decided that, for continuation of the discussion at a later stage, an alternative draft should be prepared, based on the above-suggested wording (see above, para. 31), which referred to the use of a "method" along the lines of article 7 of the Model Law.

Subparagraph (b) - Definition of "enhanced electronic signature"

33. It was suggested that the notion of "enhanced electronic signature" should be replaced by that of "certified electronic signature", which was said to be more in line with digital signature practice. While support was expressed in favour of the proposal, it was generally felt that the notion of "enhanced" signature was preferable since the intervention of a third party to certify the signature would not be necessary in all instances.

34. With a view to better expressing the idea that the enhanced electronic signature should be both unique as a signature and singular to the signer, a proposal was made to replace subparagraph (b) by the following:

"Enhanced electronic signature" means an electronic signature in respect of which it can be shown, through the use of a security procedure, that:

- (i) it was unique in the context in which it was used; and
- (ii) it was not used by any person other than the signer".

35. Some support was expressed in favour of the proposal. However, doubts were expressed as to whether the elements of the definition contained either in the new proposal or in the original subparagraphs (i) to (iii) did create any difference in substance between an "electronic signature" and an "enhanced electronic signature". With a view to expressing the specific character of an "enhanced electronic signature", it was suggested that additional language should be introduced in subparagraph (b) along the lines of subparagraph (b)(iv) contained in WP.79 as follows:

"(iv) was created and is linked to the data message to which it relates in a manner such that any change in the data message would be revealed".

36. Strong support was expressed in favour of the suggested addition, which was said to provide a necessary (and otherwise missing) link between the enhanced signature and the information contained in the data message. It was stated that applying an "enhanced electronic signature" should make any subsequent alteration of the message more difficult, much in the same way as the use of a handwritten signature made it more difficult to alter the contents of a paper document. In addition, it was pointed out that, although the function described in subparagraph (iv) was similar to the "hash function" offered

by digital signatures, any other signature technique (e.g., authentication techniques based on signature dynamics) should be capable of offering the same level of reliability as to the integrity of the message. A guarantee as to the integrity of the message was needed, particularly in view of the ease with which undetectable changes could be made to documents in electronic form.

37. It was objected, however, that not all electronic signatures providing a high degree of security would perform the function referred to in subparagraph (iv), which was said to be typical of certain types of digital signatures only. As to a possible parallel between the hash function and the handwritten signature, it was pointed out that a handwritten signature as such did not offer much certainty as to the non-alteration of the document. With respect to the difference between an "electronic signature" under subparagraph (a) and an "enhanced" signature under subparagraphs (b)(i) to (iii), it was stated that only the "enhanced" signature inherently involved the use of security procedures which could provide highly objective assurances as to the identity of the signer. The view was expressed that such an identification function should be considered separately from the function of verifying the integrity of the message, which might be needed only where the law required an original document. As a matter of drafting, it was stated that the wording of subparagraph (iv) might lend itself to misinterpretation, particularly if the provision that any alteration in the data message should be "revealed" were to be read as implying that the exact nature of the alteration would be spelled out. It was proposed that, should subparagraph (iv) be retained, language based on the text of article 8(1)(a) of the Model Law (e.g., "provides reasonable assurance as to the integrity of the message") should be used.

38. A concern was expressed that introducing subparagraph (iv) in the definition of "enhanced electronic signature" might raise questions as to the consistency of the Uniform Rules with article 8 of the Model Law. While article 8 provided that integrity should be guaranteed "from the time when [the information] was first generated in its final form", subparagraph (iv) would require integrity only as of the time when the signature was applied. It was stated in response that the definition of "enhanced electronic signature" was not aimed at dealing with the functional equivalence between a data message and an original document for all legal purposes. Rather, that definition was meant to ensure that an enhanced electronic signature could reliably identify a given message as the message which had been sent.

39. After discussion, the Working Group decided that a text along the lines of the suggested subparagraph (iv) should be added between square brackets to the text of subparagraph (b) or, as an alternative, to the text proposed in para. 34 above, for continuation of the discussion after the Working Group had reviewed the substantive provisions of the draft Uniform Rules. It was felt that the definition of "enhanced electronic signature" might need to be reconsidered, together with the general architecture of the Uniform Rules, once the purpose of dealing with two categories of electronic signatures had been clarified, particularly as regards the legal effects of both types of electronic signatures. It was suggested that it might be justified to deal with electronic signatures offering a high degree of reliability only if the Uniform Rules were to provide a functional equivalent to specific uses of handwritten signatures (e.g., deeds under seal, signatures certified by witnesses, and other types of certified signatures). However, it was also suggested that international unification or harmonization of such specific uses of handwritten signatures might be particularly difficult, while presenting little relevance to the vast majority of international commercial transactions. If, for those reasons, such specific form requirements were to remain outside the scope of the Uniform Rules, the additional

benefit to be expected from using an "enhanced electronic signature" as opposed to a mere "electronic signature" might need to be further clarified, possibly in the context of draft article B. The Working Group agreed that discussion as to that issue might need to be reopened at a later stage.

Subparagraph (c) - Definition of "signature holder"

40. While general support was expressed for the substance of subparagraph (c), a question was raised as to whether the definition of "signature holder" should simply replace the definition of "signer" as contained in WP.79. It was suggested that, while the signature holder and the signer would, in most instances, be the same person, the two concepts might need to be used for distinguishing the act of signing from the mere possession of a signature device. While the discussion focused on the definition of "signature holder", it was widely felt that the discussion might need to be reopened at a later stage regarding the possible definition of "signer".

41. Various views were expressed as to the exact formulation of subparagraph (c). One view was the definition should not cover only situations where an "enhanced electronic signature" was used but should extend to situations where signature devices were used in the context of mere "electronic signatures". To the extent the "signature holder" might be granted rights and obligations under draft articles E, F and G, there was no reason why the same rights and obligations should not be attributed to users of "electronic signatures" in general. A note of caution was struck, however, about burdening all users of electronic signatures with the obligations created for the signature holder under those articles. For example, under the laws of certain countries, the mere typewriting of the name of the signer at the bottom of an electronic mail message might be sufficient as a "signature". However, it might not be appropriate to provide that the signer should protect such "signatures" to the same extent the "signature holder" should protect the "signature device" containing a private key in a public-key infrastructure (PKI) environment. It was generally agreed that the matter would need to be further discussed in the context of draft articles E to G.

42. A widely shared view was that subparagraph (c) should apply only to the "rightful" holder of the signature device, as a person whose rights and obligations were being dealt with in subsequent articles of the Uniform Rules. Any person coming into possession of a signature device through fraud should not be protected by the Uniform Rules.

43. A concern was expressed that the words "on whose behalf" might raise questions regarding the law of agency and representation of legal entities, which the Uniform Rules should not interfere with. In response, it was observed that similar wording had been introduced in the definition of "originator" under the Model Law, on the assumption that any implication concerning agency should be settled by reference to the law applicable outside the Model Law. It was generally felt that the same assumption should be made under the Uniform Rules (see below, para. 90).

44. Another concern was that the notion of "signature holder" might be inconsistent with the notion of "originator" under the Model Law. It was stated in response that, while the signature holder and the originator might be the same person, it was still justified to maintain two definitions, in view of their distinct purposes. The notion of originator was used to determine the person to whom the message was attributable, whereas the signature holder had to be identified to determine who owed obligations for

managing a signature device.

45. As a matter of drafting, it was suggested that the notion of "signature device holder" would be more appropriate, although admittedly more cumbersome, than the notion of "signature holder".

46. With a view to addressing some of the views and concerns that had been expressed, it was suggested that alternative wording for subparagraph (c) might be considered along the following lines:

"Signatory" means a person who rightfully holds a signature creation device and acts either for himself or the entity he represents".

47. The Working Group did not conclude its deliberations with respect to subparagraph (c). In the context of the discussion of the definition of "signature holder" the view was expressed that the scope of the definition (as the scope of the draft Uniform Rules in general) was too broad and that, as a consequence, the individual rules contained therein were too general to provide any meaningful answer to the difficulties that were encountered in practice with respect to public-key infrastructures (PKI) in the context of which digital signatures were used (for continuation of the discussion, see below, para. 66).

48. The Working Group engaged in a general discussion of the scope of the Uniform Rules. In view of various remarks and concerns expressed at earlier stages in the discussion, it was suggested that the concepts of both electronic signature and enhanced electronic signature should not be used in the Uniform Rules since they were not in fact "signatures", but rather techniques that enabled the identification of the sender of a data message and identification of the message that was sent. Accordingly, there was no rationale for using the term "signature" to describe such techniques, and in fact to do so could create confusion as the term "signature" carried with it meanings closely associated with its use in the paper environment and with the legal effects of its use in that environment (see above, paras. 23-24). It was suggested that article 7 of the Model Law provided a rule which dealt sufficiently with the functional equivalent of signatures in the paper and electronic environments in so far as such a rule was needed. Formulating a rule which indicated which signature techniques would satisfy the test in article 7 was not appropriate in view of these factors and in view of the difficulties associated with trying to ensure that technologies which had not yet been developed might be brought within the scope of such a provision. In addition, a view was expressed that adopting a single rule to indicate which signature technique would satisfy article 7 of the Model Law would be inappropriate in the light of the diversity of the concept of "signature" in the different legal traditions.

49. Another suggestion was that the Working Group should consider technologies which had been developed and which were being used in commercial transactions, such as digital signature techniques within a public key infrastructure (PKI). Once rules on PKI had been agreed, it would be possible to consider whether such rules could have a wider application. On that basis, it was proposed that the Working Group should not proceed to consider draft A to D of WP.80, but should focus upon draft articles F to H of WP.80 in the context of PKI (see above, para. 4).

50. That suggestion was widely supported, although some concerns were expressed that the focus on PKI might be too narrow and likely to discriminate against technologies other than PKI. It was suggested that draft articles A to D should not be dismissed without further consideration, but that

discussion could be deferred until after draft articles F to H had been reviewed. It was pointed out that draft article B, in particular, might serve an important function in defining the scope of application of articles F to H. In addition, it was suggested that article E, which dealt with the principle of party autonomy, would be important to any consideration of the obligations of the parties in articles F to H. A further suggestion was that the question of cross-border recognition of foreign digital signatures and certificates, as discussed in draft articles 17 to 19 of document A/CN.9/WG.IV/WP.76 should also be considered in the context of rules on PKI. It was also noted that WP.79 could serve as a useful reference in determining whether there were other issues (in addition to draft articles E to H and issues of cross-border recognition) that could be considered in the context of rules on PKI.

51. The Working Group generally agreed to continue its consideration of these issues on the basis that it would focus first upon rules for PKI as reflected in draft articles E to H of WP.80, with the possibility of considering the extension of those rules once they were agreed; that issues of media neutrality and the legal effects of PKI would not be further pursued at this stage but kept in mind for continuation of the discussion at a later stage; and that cross-border recognition issues would be added to the topics to be considered. It was recognized that since WP.80 had not been drafted with this focus in mind, the document should only be viewed as a starting point for discussion. As to the form of the Uniform Rules, while no final decision could be made at this stage, the Working Group adopted as a working assumption that the provisions being prepared would be legal rules with commentary, and not merely guidelines (for continuation of the discussion, see below, para. 72).

52. The Working Group proceeded next with a discussion of the substance of draft articles E to G.

Article E. Freedom of contract

53. The text of draft article E as considered by the Working Group was as follows:

"A signature holder and any person who may rely on the electronic signature of the signature holder may determine that as between themselves the electronic signature is to be treated as an enhanced electronic signature".

54. As the Working Group was to consider the question of party autonomy in the context of PKI, it was felt that the focus of draft article E might be too narrow and that a broader consideration of the issue was required. While it was generally agreed that commercial parties should have the freedom to contract and allocate risk between or among themselves, some limits might need to be stated, for example, in relation to consumer protection or other public policy issues.

55. To facilitate discussion of a broader concept of party autonomy, the following text was proposed:

"(1) These Rules are intended only for commercial relationships and shall not be applied so as to conflict with any law concerned with the protection of consumers.

"(2) By agreement, whether express or implied, commercial parties are free to deviate from

or modify any aspect of these Rules.

(Commentary would say that 'None of the provisions of these Rules is mandatory'.)

(Commentary would say that this autonomy provision relates only to these Rules, it does not affect *ordre public* or mandatory laws applicable to contracts such as provisions relating to unconscionable contracts.)

"(3) None of the provisions of these Rules shall be applied so as to exclude, restrict, or discriminate against any alternative form of electronic signature [that meets the requirements of article 7 of the Model Law on Electronic Commerce] [that is applied to a data message and is as reliable as was appropriate for the purpose for which the data message was generated or communicated, in the light of all the circumstances, including any relevant agreement]."

56. There was general support for an article along the lines of the proposal. As a matter of drafting, it was suggested that the reference to consumers in paragraph 1 of the draft article should be aligned with the language of footnote** to article 1 of the Model Law as follows: "This Law does not override any rules of law intended for the protection of consumers" (see above, para. 20, and below, para. 70). Another drafting suggestion was that the second square-bracketed language in proposed paragraph (3) should be deleted, as the reference to article 7 of the Model Law was the more appropriate alternative and, in order to align the drafting to article 7, the words "electronic signature" should be deleted and the word "method" substituted. A further suggestions was that the heading "Party Autonomy" should replace the heading of draft article E. There was general support for these drafting proposals.

57. It was suggested that the reference to agreement between the parties did not address the issue of possible detriment to third parties not involved in the agreement with sufficient clarity. To ensure that any agreement between the parties could not have effects on third parties, it was proposed that words to the effect that the parties were free to agree to certain effects "as between themselves" should be adopted from draft article E. That suggestion was widely supported.

58. Some concern was expressed as to the meaning of paragraph (3) and its relationship to paragraphs (1) and (2). It was pointed out that while paragraphs (1) and (2) clearly related to the issue of party autonomy, paragraph (3) introduced a different principle, i.e., that of non-discrimination. Without further considering the content of such a provision at this stage, it was proposed that paragraph (3) should be included as a separate article. That proposal was widely supported. As to the meaning of paragraph (3), it was suggested that such a provision was not needed, since the purpose of the draft rules would not be to give a benefit to any particular technique, even though focusing upon PKI. It was widely felt, however, that, pending a final decision by the Working Group as to whether the Uniform Rules would deal with any specific legal consequence of using digital and other electronic signatures, a provision along the lines of the proposed paragraph (3) was useful.

59. A further concern with the proposed article was that, when considered in the context of draft article F which covered obligations in both contract and tort, the proposed article on party autonomy might allow the parties to agree to modify the law of tort. It was pointed out in response that, in commercial relationships, the parties should be free to modify those obligations and, for example, accept higher or lower levels of liability than would otherwise be the case under the general law of tort.

60. In order to reflect the various views and concerns expressed in the discussion, an amended

proposal was made as follows:

"(1) These Rules shall apply only to commercial relationships and shall not be applied so as to override any law intended for the protection of consumers.

"(2) By agreement, whether express or implied, among themselves commercial parties are free to deviate from or modify any aspect of these Rules.

(Commentary would say that 'None of the provisions of these Rules is mandatory'.)

(Commentary would say that this autonomy provision relates only to these Rules, it does not affect *ordre public* or mandatory laws applicable to contracts[, such as provisions relating to unconscionable contracts].)

(Commentary may address significance of phrase 'among themselves'.)

"(3) None of the provisions of these Rules shall be applied so as to exclude, restrict, or discriminate against any alternative method [of signature] that meets the requirements of article 7 of the Model Law on Electronic Commerce."

61. There was wide support for the substance of the revised proposal. However, a suggestion was made that the principle of party autonomy could be expressed more succinctly. Some doubt was also expressed as to whether the rules should be limited to commercial relations, as indicated in paragraph (1) of the proposal, or whether draft articles F to H might also be useful in the context of consumers. One suggestion was that the rules should apply equally to consumers and commercial parties, provided mandatory law for the protection of consumers was not affected. A view was expressed that the reference to mandatory law or *ordre public* should be transferred from the commentary and set out explicitly in the text of the proposed rule.

62. With a view to addressing some of the concerns raised in connection with proposed paragraphs (1) and (2), language along the following lines was proposed:

"These Rules shall only apply insofar as parties have not agreed otherwise, and they shall not override any mandatory law or *ordre public*."

Some support was expressed for the substance of that proposal.

63. It was observed that, in order to reach a proper understanding of the scope of an article on party autonomy, it might be important to consider the nature of draft articles F to H. One view was that the draft articles were intended to be default or gap-filling rules which would apply when the parties had not made any agreement on the issues covered. Another view was that the draft articles would apply unless the parties agreed otherwise. Strong support was expressed in favour of the view that draft articles F to H should perform the function of gap-filling rules.

64. After discussion, the Working Group concluded that both the detailed proposal and the concise proposal for a new article on party autonomy addressed the same principle. The Working Group agreed that, for continuation of the discussion at a future session, the revised article on party autonomy

should: address the preservation of consumer protection laws; focus on commercial relationships as defined in footnote **** to article 1 of the Model Law; ensure the freedom of parties to agree between themselves; and preserve mandatory laws. The Working Group agreed that these principles on party autonomy would form a satisfactory basis for considering draft articles F to H and that the discussion on party autonomy could be resumed at a later stage in the light of the discussion on those draft articles. As to the need for a provision on non-discrimination, which had been raised in the proposal for a more detailed article on party autonomy, no decision was made. It was agreed that further consideration of that principle should be deferred until after draft articles F to H had been reviewed.

Article F. Obligations of signature holder

65. The text of draft article F as considered by the Working Group was as follows:

“(1) A signature holder is obliged to:

- (a) Exercise due care to avoid unauthorized use of its signature;
- (b) Notify [appropriate persons] [as soon as possible] in the event its signature is compromised and could be used to create unauthorized enhanced electronic signatures;
- (c) Ensure that all material representations or statements made by the signature holder to information certifiers and relying parties are accurate and complete to the best of the signature holder's knowledge and belief.

“(2) A signature holder shall be responsible for the consequences of its failure to fulfill the obligations in paragraph (1)”.

General remarks

66. As a provisional conclusion of its deliberations over the definition of “signature holder” in draft article A (see above, paras. 40-47), the Working Group considered whether the “signature holder” should be the subject of the obligations stated in draft article F. It was recalled that, since the notion of “signature” was used as a reference to a technical device and not to the legal notion of a signature, the use of the term “signature holder” might lend itself to misinterpretation. It was suggested that the term “device holder” should be preferred. It was also recalled that, in view of the decision of the Working Group to consider first the issues of PKI before possibly extending the scope of the Uniform Rules to cover also other electronic signature techniques, the use of established PKI terminology might be more appropriate. It was thus suggested that terms such as “subscriber” or “key holder” might be preferable. While there was general agreement for replacing the term “signature holder” by more suitable wording, no final decision was made as to what such a more suitable wording might be. It was decided that the use of the terms “device holder”, “signature device holder”, “key holder” and “subscriber”, all of which were used as synonymous during the discussion, might need to be reconsidered, and defined at a later stage.

67. In the context of that discussion, it was pointed out that the notions of "key holder" and "subscriber" might correspond to different periods in the life-cycle of a key pair. It was suggested that, while the key pair would typically be created prior to application for a certificate, the Uniform Rules should only apply to keys and key holders as of the time an identity certificate was issued (or requested) to allow for the practical use of the keys. Support was expressed in favour of that suggestion. The prevailing view, however, was that, while the duties of the key holder should only arise with respect to those key pairs that were effectively protected by a certificate (i.e., at the time when the certificate was issued), the duty of the key holder to protect such certified keys against misuse should retroact to the time of creation of the key pair.

68. With respect to the general reference to PKI and PKI terminology, the view was expressed that the interplay of relationships between three distinct types of parties (i.e., key holders, certification authorities and relying parties) corresponded to one possible PKI model, but that other models were conceivable, e.g., where no independent certification authority was involved. That view was generally accepted by the Working Group. It was generally felt, however, that one of the main benefits to be drawn from focusing on PKI issues was to facilitate the structuring of the Uniform Rules by reference to three functions (or roles) with respect to key pairs, namely, the key issuer (or subscriber) function, the certification function and the relying function. It was generally agreed that those three functions were common to all PKI models. It was also agreed that those three functions should be dealt with irrespective of whether they were in fact served by three separate entities or whether two of those functions were served by the same person (e.g., where the certification authority was also the relying party). In addition, it was widely felt that focusing on the functions typical of PKI and not on any specific model might make it easier to develop a fully media-neutral rule at a later stage (for continuation of the discussion, see below, para. 109).

69. The Working Group then discussed who the subject of the obligations stated in draft article F might be. It was widely felt that only the "rightful" holder of the key should be considered. In addition, it was generally agreed that only a key holder who was aware that it was in possession of a key pair, and who had shown an intent to use the key should be made subject to obligations. Reference was made to the holding of a credit card as similar to the holding of a key pair. However, it was realized that other types of situations also needed to be considered. For example, a prospective buyer might receive from a merchant a key pair to be used for securing possible transactions with that merchant. Such a key pair could be sent through electronic messaging, without the recipient of the message being aware of the issuance and attribution of that key pair. There was general agreement that, in such a case, the recipient of the key pair should not fall under any definition of "key holder" and that it should be subject to no obligations under the Uniform Rules. It was pointed out that the notion of "reasonable care" might sufficiently address this situation since no "reasonable care" could be expected as to the key pair from the unaware holder.

70. In the context of the discussion as to who the subject of the obligations stated in draft article F might be, the Working Group examined the consequences of its earlier decision to deal with the issues of consumer protection laws by way of a provision similar to footnote ** to article 1 of the Model Law. The view was expressed that (at least under the laws of a limited number of countries), even where a key holder had expressed an intent to use a key pair, the obligations established in draft article F might be regarded as too harsh if the key holder were to be regarded as a consumer. While

it was generally felt that, in a large number of countries, the general duty of care expressed in draft article F would also apply to consumers, the Working Group reaffirmed its decision not to embark on the preparation of specific consumer law for electronic commerce. It was recalled that, under that decision, however, consumers were not to be excluded from the scope of the Uniform Rules, and it would be for each enacting State to make a determination as to the need for exclusion of specific categories of key users from the application of the Rules (for previous discussion, see above, paras. 20 and 56).

71. The Working Group proceeded with a discussion concerning the person or persons to whom the various obligations established in draft article F were owed by the key holder. The view was expressed that those obligations were owed to either the certification authority or any other party who might rely on a digital signature in the context of contractual relationships with the key holder. The prevailing view, however, was that the obligations of the key holder were owed to any party who might reasonably rely on a digital signature, irrespective of whether or not that party was linked to the key holder by a contractual relationship. While the relationships between the key holder and either a certification authority or an independent key issuer would typically be contractual in nature, the relationship between the key holder and relying parties might be either contractual in the context of a commercial transaction, or based on tort. In view of their general nature, it was suggested that the "obligations" spelled out in draft article F would be more accurately described as "duties" of the key holder. The Working Group took note of that suggestion. It was generally agreed that the text of the Uniform Rules should make it clear that the obligations of the key holder should be owed to any party who reasonably relied on the use of a key and suffered a loss as a result of the keyholder's failure to fulfil its obligations. It was also agreed that, for the purpose of draft article F, the notion of "party who reasonably relied" on the use of a key should include certification authorities.

72. In the context of the general discussion of draft article F, a view was expressed that the current focus of the Uniform Rules on the establishment of a set of prescriptive provisions of a legislative nature was overly ambitious (see above, paras. 19 and 51). Accordingly, it was suggested that issues currently addressed in the Uniform Rules might be more easily solved if the purpose and nature of the entire project was reconsidered. Two possible alternatives to the current project were proposed. One alternative was to limit the contents of the Rules to a general model legislative provision, the effect of which would be to provide the broadest possible recognition of party autonomy. The remainder of the issues currently dealt with under the Uniform Rules might then be dealt with by way of a legal guide geared towards assisting parties with the structuring of their contracts regarding the issues of electronic signatures. Another alternative was to deal with the entire set of issues addressed in the Uniform Rules by way of a legislative guide, possibly accompanied by illustrative provisions. While it was pointed out that the current working assumption regarding the preparation of model legislative provisions accompanied by a legislative guide might, in practice, differ little from the latter proposed alternative, the greatly prevailing view was that the Working Group should pursue its task (the importance of which was reaffirmed, although some delegations questioned its feasibility) on the basis of the current working assumption (see above, para. 51). It was observed that, where appropriate, the Working Group might consider introducing optional formulations in the text of the Uniform Rules.

Paragraph (1)Subparagraph (a)

73. It was widely felt that additional elements should be inserted alongside the notion of "avoiding unauthorized use of the key". It was suggested that the key holder should be under an obligation to: avoid misuse of the key; and exercise due care in retaining control of the key and control of the information contained in the signature device or used in conjunction with the signature device to create the digital signature. It was generally agreed that the notion of "control" of the key and of the information contained therein was essential, particularly for determining the time as of which the key holder should come under the obligations spelled out in draft article F. In particular in those situations where the control of the key was transferred among several successive holders of the key, draft article F should make it clear that only the person who was in control of the key was under an obligation to protect that key.

74. In connection with the discussion as to who was in control of the key, a question was raised as to whether, at any given point in time, there could be more than one holder of the same key. It was proposed that wording might be added to paragraph (1) along the following lines: "If [there are joint holders][more than one person has control of the key], the duties under paragraph (1) are joint and several". The Working Group took note of the proposal and decided that it should be reflected in the revised draft of the Uniform Rules to be prepared for continuation of the discussion at a later session.

75. With respect to the words "exercise due care", it was observed that draft article F reflected the assumption that the responsibility of the key holder was based on a standard of due diligence (also referred to as "liability for negligence") rather than on the notion of strict liability.

Subparagraph (b)

76. There was general support for a rule along the lines of subparagraph (b). It was pointed out that the words in square brackets indicated two important matters to be clarified: the persons to be notified and the time at which notification should occur.

77. On the first issue, one suggestion was that any reference to the parties to be notified should not be included, or at least that they should not be specified, as a number of different bodies might be relevant where certification authority functions were distributed. It was proposed that this issue should be further considered at a later time when it would be clear what the scope of the duties covered in the rules and the persons to whom they applied was resolved. At that time, a specific reference to the relevant persons could be included in this article. For the same reasons, it was suggested that the term "appropriate persons" should be maintained.

78. On the question of the time at which notice was required to be given, it was suggested that "without undue delay" should be adopted, as it was well understood and widely used in a number of jurisdictions and provided an appropriately flexible standard.

79. A related question was raised as to the time at which the duty to notify arose. One possibility expressed was that it arose at least as early as the time at which there was actual knowledge of the compromise of the key, but it was suggested that it could arise before that time if it could be established that the key holder ought to have known or should have known that the key was compromised. Another view was that the duty to notify arose when the key holder had "adequate grounds for suspicion" or a "reasonable suspicion" that the key was compromised or that the key was or might have been compromised. It was questioned whether there was a difference between the knowledge test in the first proposal and the question of the fact of compromise in the second. Differing views were expressed as to whether these standards were the same or achieved the same result, or whether the result in each case was desirable. In regard to the latter point, one view was that apportioning responsibility on the basis that the key "might have been compromised" placed too heavy a burden on the key holder and might discourage use of the technology. After discussion, the Working Group generally agreed that both of these standards should be included in a revised draft of subparagraph (b) for future consideration.

80. It was suggested that the rule contained in subparagraph (b), if it essentially dealt with a question of negligence, should be supplemented by a rule dealing with apportionment of risk. If risk were to be considered, it would be necessary to decide when the risk was transferred from the key holder – when notice was given, when the notice was received or when action was taken on the notice. It was pointed out in response that issues of transfer of risk were different from rules on proper and reasonable conduct, which were based on the concept of fault. The concept of risk was important where there was no question of fault. The two types of rules should be kept separate, as liability could not be equated with risk. It was noted that subparagraph (a) established a duty to take care of the key which, under paragraph (2), could lead to liability in the event that care had not been taken. Subparagraph (b) was important in that event, as it provided a means by which the key holder could mitigate the effects of the failure to take care by giving notice of the compromise of the key. In the context of liability, it was also pointed out that it might be important to consider the basis of any relationship between the parties, whether contractual or not and the content of that contract. There was general support for the formulation of a rule based on fault.

81. The question was raised as to whether the Working Group might want to consider dealing with the legal effects of the failure to take care of the key. One view was that as this issue had proven very difficult to reach consensus on in the past, it should not be considered here. Another suggestion was that WP.79 dealt with issues of effects in greater detail and would provide a useful starting point for considering these questions further. A further view was that the detail of liability should not be dealt with beyond the content of paragraph (2), which had yet to be discussed.

82. As a matter of drafting, it was suggested that the words "and could be used to create unauthorized enhanced electronic signatures" was not needed, since it was clear what the signature device could be used for and it did not need to be stated.

83. The Working Group agreed that a future draft of subparagraph (b) should reflect the changes discussed: notice should be given "without undue delay"; the two standards of "knew or ought to have known" and "is or might have been compromised" should be included in square brackets as alternative texts; and the words "and could be used to create unauthorized enhanced electronic signatures" should be deleted.

Subparagraph (c)

84. It was suggested that the words "to information certifiers and relying parties" should be deleted on the grounds that while representations to these parties were probably the ones which should be covered, it was conceivable that there might be representations to other relevant parties. The focus of the article should be upon the obligation for the information be accurate and complete, regardless of to whom the information was provided. In response to this suggestion, it was pointed out that removing the words referring to information certifiers and relying parties might mean that the obligation was unlimited, when the focus should actually be upon representations which related to the process of identification. It was proposed that the words "and that are material to the issuance of the certificate" be added after "representations and statements".

85. Another suggestion on the issue of an objective test was that the words "which are relevant in the process of issuing a certificate or which are included in the certificate" should be added after "representations or statement". It was pointed out that such a test limited subparagraph (c) to statements made by the key holder or the person who applied for a certificate, and would not be relevant in cases where a key holder did not apply for a certificate. It was not intended, however, that those words should be interpreted in such a way as to make the person applying for a certificate liable for representations which might be stated incorrectly in the certificate, or which otherwise were not based upon information provided by the applicant for a certificate. In such cases, the information certifier would have a corresponding obligation under draft article H with respect to the content of the certificate. A key holder would be liable, however, on a narrow construction of the obligation, to a relying party where the relying party suffered loss or damage as a result of misleading or false information provided by the key holder and included in the certificate. Opposing the limitation of the subparagraph to the certification process, the view was expressed that the obligation in subparagraph (c) should be general and include the provision of information under subparagraph (b).

86. A further proposal on the scope of subparagraph (c) was that the subparagraph should be divided into two parts. Representations made to a relying party could be covered by the general obligation as to completeness and accuracy, while representations which were made to an information certifier for the purposes of obtaining a certificate could form a separate subparagraph. In the case of the information provided to the information certifier, the connection between the obligation in this draft article and that in draft article H(1)(b) (which imposed an obligation in respect of information to be certified) was highlighted.

87. Some concern was expressed as to the persons to whom the obligations in paragraph (1) should apply. It was pointed out that it might not be appropriate to consider the whole of article F as establishing duties for the same person, as the subparagraphs of the current draft referred to different concepts. Subparagraph (a), for example, referred to both information and the device on which that information was stored and the way in which it was used. It may be that the obligation applied to a wider class of persons than just the key holder. Subparagraph (c), on the other hand, referred to information in the form of representations made to certain persons for the purpose of obtaining a certificate. These differences might need to be treated separately in any revision of the obligations in paragraph (1) of draft article F.

88. In relation to the knowledge and belief of the key holder at the time of making representations, it was pointed out that such a test was unnecessarily subjective and weak, and might result, for example, in a reduced level of responsibility where the key holder was reckless or stupid. What was required was objective language which made it clear that this was not an intended consequence of the subparagraph. One suggestion was that the words "to the best of the signature holder's knowledge and belief" should be replaced by a reference to a due diligence standard; the opening words of the subparagraph could be "Exercise due diligence in ensuring that ...". With respect to the words "accurate and complete", a view was expressed that the reference to a "complete" statement was superfluous since, in some jurisdictions, the concept of "completeness" was already included in the concept of "accuracy". That view was noted by the Working Group.

89. On the issue of terminology, the Working Group again discussed the meaning of a number of different terms, including signature holder, device holder, key holder and signature device, signature creation device, signature verification device (see above, paras. 40-47). It was proposed, in terms of a definition, that "key holder" should refer to the person by whom, or on whose behalf, the signature was attached to the data message, adopting the drafting of subparagraph (c) of article A of WP.80, a definition which recognized the concept of agency. As to the device or signature being used, the Working Group generally agreed that it was not the device that was used to create the key that was being discussed, but rather the device that was used to create the signature.

90. The Working Group considered the desirability of including agency within the concept of a key holder (for previous discussion, see above, para. 43). The general view was that agency should not be covered in the Uniform Rules, as it would be difficult to reach agreement on principles of agency and inclusion of that concept would make the scope of draft article F too broad. Where a situation of agency might be involved, such as in an employee using a signature device for a corporation, this article would have the effect that, without prejudice to corporation law, the signature of the employee would be regarded as that of the corporation, which was effectively the "key holder". The Working Group reaffirmed its earlier decision that issues of agency should be resolved under applicable law.

91. A suggestion of a drafting nature was that the term "material" was not appropriate in some jurisdictions and should therefore not be used. Another suggestion of a drafting nature was that, since the obligation under subparagraph (c) preceded the obligation under subparagraph (a) in time, the order of these two subparagraphs should be reversed.

92. After discussion, the Working Group agreed that the scope of subparagraph (c) should be limited to looking at the key holder's obligations in the context of the certification process; the key holder should ensure that representations were accurate and complete, the reference to "knowledge and belief" should be replaced by the opening words "exercise due diligence in ensuring"; the words "which are relevant in the process of issuing a certificate or which are included in the certificate" should be introduced to qualify "representations and statements", but it should be made clear that the key holder would only be liable for such statements when they were properly included in the certificate and not for mistakes or inaccuracies introduced by the information certifier; the reference to the "information certifiers and relying parties" should be removed; the order of subparagraphs (a) and (c) should be reversed; the concept of agency should not be dealt with in this article.

Paragraph (2)

93. Some support was expressed in favour of retaining draft paragraph (2) in its present form without amendment. Concerns were expressed, however, that the Uniform Rules should refer to the legal consequences of failure to fulfil the obligations set forth in draft paragraph (1). One means of addressing these consequences was to include a specific reference to national or applicable law, while a second solution was to promote harmonization by exploring possible consequences and drafting a uniform rule which should address the issue of damages, but not bind the key holder to the consequences of use of the signature device, particularly since questions of authorisation and intention might arise. However, another view was that the data message should be attributed to the key holder (see below, paras. 97 and 104). In order to place the focus of paragraph (2) on damages rather than upon consequences, it was proposed that the words "The key holder is responsible for damage and injury resulting from the failure to fulfil the obligations in paragraph (1)" should be adopted. As another means of addressing the legal consequences of failure to fulfil the obligations set forth in draft paragraph (1), it was proposed that draft article 7 of WP.79 should be considered, or perhaps an article along the lines of article 74 of the United Nations Convention on the International Sale of Goods. For the purposes of considering this proposal further, the following wording based on article 74 was suggested:

"Liability of the key holder may not exceed the loss which the key holder foresaw or ought to have foreseen at the time of its failure in the light of facts or matters of which the key holder knew or ought to have known to be possible consequences of the key holder's failure to fulfil the obligations in paragraph (1)."

94. In response to this proposal based on article 74 of the United Nations Sales Convention, concern was expressed that the liability which might arise in the context of a contract for the sale of goods was not the same as liability that might arise from the use of a signature and could not be quantified in the same way. While it might be possible to foresee the damage that could arise from the breach of a contract for sale of goods, the same test could not apply in the case of the use of a particular signature technique. It was stated in that context that, under the Uniform Rules, the use of a particular signature technique should not result in any particular limitation of liability (or in any other competitive advantage over users of traditional hand-written signatures) being established to the benefit of users of electronic technology. Another view was that the test of foreseeability of damage was an internationally accepted standard which might prove to be useful in the context of signatures and facilitate the drafting of a uniform rule. A further view was that if an article on damages was to be considered, it may be necessary to distinguish between damage which arose as the result of action by the key holder which failed to meet the standard required by draft paragraph (1) and damage which arose because the key holder failed to take any action, that is between direct and indirect damage.

95. It was suggested that the duties of the key holder in article F should be analysed in terms of the parties or classes of parties to whom the duty was owed; the information certifier on one hand and a group of potential relying parties on the other. It was clear that the relationship between the key holder and the information certifier would be a contractual relationship which would be governed by the applicable law. Some doubt was expressed as to the appropriateness of applying a rule on foreseeability or remoteness of damage to such a contractual relationship. In terms of the group of relying parties,

it was suggested that it might be appropriate to establish a rule which determined which relying parties might foreseeably suffer damage and the type of damage for which the key holder would be liable. Doubts were expressed as to whether article 74 of the United Nations Sales Convention captured both of these concepts and whether, in any event, it would be appropriate to have a single foreseeability rule which covered the obligations set forth in subparagraphs (a) to (c) of draft paragraph (1). It was also pointed out that draft article G dealt with issues relating to the relying party and would have to be taken account of in any article dealing with the consequences of failure on the part of the key holder to observe the obligations in draft article F.

96. To clarify the scope of application of draft paragraph (2), it was proposed that the reference to the "consequences of failing to fulfil the obligations in paragraph (1)" should be deleted, in order to avoid any uncertainty as to what the inclusion of those words might mean and to avoid considerations of whether the obligation being breached was contractual. It was also pointed out that the phrase "the consequences" might suggest that all possible consequences were under consideration and did not convey any idea as to the remoteness of those possible consequences. Deletion of these words was widely supported.

97. A further concern was expressed that if draft articles F and G were read together they could lead to a legal effect other than liability, namely attribution. It was suggested that, at the very least, a rule or a rebuttable presumption on attribution of the signature was required in order to remove uncertainty. While there was some agreement that such an article might be useful and would add to the level of trust in electronic commerce, it was pointed out that difficulties were certain to arise in the context of article 13 of the Model Law which dealt with attribution of a data message. It was generally agreed that attribution should not be considered in the context of draft article F (see below, para. 104).

98. After discussion, the Working Group agreed that, as there was both support for retaining paragraph (2) in its present form, with suggested amendments and for exploring a rule on consequences, possibly based on article 74 of the United Nations Sales Convention, a revised draft of paragraph (2) dealing with both possibilities should be included in future working papers for consideration by the Working Group. Such a provision should be limited in its application to the duties to be included in a revised version of paragraph (1) of draft article F.

Article G. Reliance on enhanced electronic signatures

99. The text of draft article G as considered by the Working Group was as follows:

"A person is entitled to rely on an enhanced electronic signature, provided it takes reasonable steps to determine whether the enhanced electronic signature is valid and has not been compromised or revoked".

100. Some concerns were expressed that the form in which the article was drafted was not appropriate. It was pointed out that the question that should be considered was not whether the relying party was entitled to rely upon the signature, but rather what anyone seeking to rely on the signature might have to do before reliance could be regarded as reasonable. In that regard, it would be important to indicate the situations where it would be unreasonable to rely upon the signature. In order to reflect

that change of emphasis, the following words were proposed:

"(1) A person is not entitled to rely on a certificate or a signature supported by a certificate to the extent that it is not reasonable to do so.

"(2) In determining whether reliance is reasonable, regard shall be had to:

- (a) any restrictions placed upon the certificate;
- (b) the nature of the underlying transaction that the certificate or signature was intended to support;
- (c) whether the relying party has taken appropriate steps to determine the reliability of the signature or the certificate;
- (d) any agreement or trade usage or course of dealing which the relying party has with the information certifier or subscriber".

101. Support was expressed in favour of that proposal. To clarify what was intended by the reference to the underlying transaction in subparagraph (b), it was observed that situations might arise where it might not be sufficient to rely only on the use of a technique of identification and some other form of identification or checking might be needed. The example was given of a situation where a bank might want further confirmation that a transaction that might be considered unusual for a particular customer was in fact that customer's transaction, in addition to the use of an appropriate identification technique. Some concern was expressed that the factors stated in subparagraphs (a) to (d) might be too general and, in the context of the Working Group's assumption that PKI was being addressed, it might be helpful to make a specific reference to the need to check the validity or reliability of the certificate. For that purpose, it was suggested that the words "including reference to a certificate revocation list where relevant" could be added to subparagraph (c).

102. It was suggested that in addition to the factors set forth in subparagraphs (a) to (d) of the proposal, reference also should be made to whether the relying party knew or ought to have known that the key had been compromised or revoked or, as an alternative, that it was not reasonable to rely on the signature or the certificate. To introduce additional flexibility in the proposed text, a further suggestion was made to add the words "if appropriate" in paragraph (2) after the words "regard shall be had". Both of those proposals received some support.

103. Some support was also expressed for retaining draft article G in its current formulation or deleting it altogether. It was pointed out that constructing an article along the lines of the proposed text would suggest the establishment of requirements or conditions for reliance on enhanced signatures. The consequences of such requirements, when considered in the context of article 13 of the Model Law, might create a situation in which it would be easier to rely on a relatively insecure electronic signature than on the more secure enhanced signature. This might have the effect of making the more secure form of signature more difficult to use. Another view was that some connection should be drawn between reliance upon the signature and article 13 of the Model Law, in particular paragraphs (3) and

4). A further view was that the current formulation of draft article G expressed a more positive policy as to whether relying parties were entitled to be confident in the use of this type of signature. Nevertheless, it was felt that some precautions might need to be taken by a relying party and a further proposal along the following lines was made:

"A person is entitled to rely on an enhanced electronic signature provided it takes reasonable measures to verify the validity of the signature according to the standards agreed with the key holder or to verify the information provided by the information certifier."

That proposal did not receive support.

104. Concern was expressed that the Working Group might be trying to build into draft article G legal effects that were included in draft articles B and C, but which it had been decided should not be considered at this stage. Formulating draft article G as an entitlement to rely might presume certain legal effects, while establishing what ought to be done in order to rely avoided addressing the issue of what legal effect the signature might have. It was stated that, since draft articles F, G and H focused upon rules of conduct for parties within a PKI, it was not appropriate for legal effects to be included. As to the question of attribution as raised by article 13 of the Model Law (see above, para. 97), it was observed that, while article 13 was generally limited in its scope to the situation where there was a contractual relationship between the originator and addressee of the data message, these Uniform Rules were intended to have a broader sphere of reference. It was also pointed out that formulating draft article G as a series of steps that should be considered in order to determine whether reliance was reasonable was not inconsistent with the requirement in article 13 for reasonable care, nor did it establish legal effect in terms of the validity of the signature. On the latter point, it was noted that draft article F as revised by the Working Group also did not address legal effect or validity of the signature and the form of these two draft articles was therefore consistent.

105. An opposing view was that formulating draft article G as an entitlement added a benefit that was not available under the Model Law, regardless of whether the specific legal effect was spelled out in other articles. It was proposed that the approach of establishing an entitlement to rely could be combined with the steps to be considered in determining whether reliance was reasonable as follows: "1) A person is entitled to rely on a certificate or a signature supported by a certificate to the extent that it is reasonable to do so". A second paragraph would then set out the matters to be considered as previously proposed, with an additional category covering "all other relevant factors".

106. As a matter of drafting, it was noted that the words "reliance" and "enhanced" were not commonly used in some languages or legal systems and a more appropriate word might need to be sought.

107. After discussion, the Working Group agreed that both formulations of draft article G (see above, paras. 100 and 105) should be included in a revised article G for future consideration; that the references to "all other relevant factors" and to whether the relying party knew or ought to have known that the key had been compromised or revoked or, as an alternative, that it was not reasonable to rely on the signature or the certificate should be included; and that the words "if appropriate" should be added to paragraph (2) as discussed.

Article H. Obligations of an information certifier

108. The text of draft article H as considered by the Working Group was as follows:

“(1) An information certifier is obliged to:

- (a) act in accordance with the representations it makes with respect to its practices;
- (b) take reasonable steps to determine accurately the identity of the signature holder and any other facts or information that the information certifier certifies;
- (c) provide reasonably accessible means which enable a relying party to ascertain:
 - (i) the identity of the information certifier;
 - (ii) the method used to identify the signature holder;
 - (iii) any limitations on the purposes for which the signature may be used; and
 - (iv) whether the signature is valid and has not been compromised.
- (d) Provide a means for signature holders to give notice that an enhanced electronic signature has been compromised.
- (e) Ensure that all material representations or statements the information certifier makes are accurate and complete to the best of its knowledge and belief;
- (f) Utilize trustworthy systems and procedures in performing its services.

“(2) An information certifier shall be responsible for the consequences of its failure to fulfill the obligations in paragraph (1)”.

General remarks

109. The view was expressed that the possibility of stating opinions regarding the duties and liability of a certification authority was largely conditioned by the definition of a certification authority. In particular, a decision would need to be made as to whether the functions of a certification authority could be performed by a person or entity that was also a party to the underlying transaction for the purpose of which a certificate might be used (a working assumption currently adopted by the Working Group) or whether the certification authority should, in all instances, be independent from the parties (a situation akin to that of a notary public in a number of civil law countries). After discussion, the Working Group decided to continue its deliberation of the matter on the basis of the working assumption made at that session (see above, para. 68). While the Working Group did not discuss the definition of “certification authority” as such, it was generally agreed that the words “in the course of

its business" in the definition of "information certifier" in draft article A, should not be interpreted as implying that certification-related activities should be the exclusive business activities of a certification authority. A view was also expressed that there might be a need to differentiate between an entity that issued certificates merely as an incidental part of its business and an entity that engaged in the business of issuing certificates (whether exclusively or in addition to other business activities which the entity might carry on). A further view was that, given the important role played by certification authorities and the responsibilities that might flow from that important role, both for certification authorities and for relying parties, the Uniform Rules should clarify the status of certification authorities. After discussion, it was agreed that the issues of the definition, role and status of certification authorities would need to be discussed further at a future session.

Paragraph (1)

110. The discussion focused on whether the list of duties contained in paragraph (1), irrespective of what those specific duties might be, should be exhaustive or not. Strong support was expressed in favour of the view that paragraph (1) should be worded in terms of an open-ended, illustrative, list of duties. Language along the following lines was suggested as opening words for paragraph (1): "Without limiting the generality of the certification authority's obligation of due diligence, a certification authority is obliged, *inter alia*, to ...". It was stated that, while such a formulation might appear to be burdensome for the certification authority, it would in fact be consistent with the general rule that would currently apply to certification authorities in many legal systems. It was also stated that a broad statement regarding the obligations of the certification authority in paragraph (1) might be compensated by exemptions from liability, to be established under paragraph (2) or under draft article E. In that respect, it was suggested that the attention of the Working Group might appropriately focus on the ways in which contractual clauses exempting the liability of the certification authority might be extended beyond the contractual sphere. In response, it was stated that, even within the contractual sphere, limitations should be placed on the ability of certification authorities to limit their liability, for example where such limitation would be grossly unfair. The Working Group agreed that the question of contractual and other limitations to the liability of the certification authority would need to be further discussed at a future session.

111. Another view was that paragraph (1) should be phrased in terms of an exhaustive list of duties. It was stated that, under the law of certain countries, the certification authority might not be under a general duty of due diligence. The various obligations of the certification authority should thus be spelled out in detail to determine the exact scope of its liability. A further justification for that view was that the Uniform Rules should deal only with the performance of certification authority functions and should not restate general principles of tort law which might be applicable to all persons engaging in whatever types of activities. Under that view, since "certification-authority function" was an ascertainable concept, the Uniform Rules should only deal with activities within such certification-authority functions, and should not be open-ended. It was agreed that both views should be reflected in the revised text that would be prepared for continuation of the discussion at a future session.

112. As to the substance of the specific duties listed in subparagraphs (a) to (f), general support was expressed. Various suggestions were made as to how the expression of those duties might be improved. One suggestion was that the duty to identify the signature holder under subparagraph (b) might be superfluous, as a mere illustration of the more general duty to ensure the accuracy of material

representations under subparagraph (e). It was generally felt, however, that subparagraph (b) was useful to enhance clarity. Another suggestion was that subparagraph (b) should contain an additional obligation to state in the certificate the identity of the key holder.

113. Yet another suggestion was that, among its basic duties, the certification authority should be under an obligation to operate a certificate revocation list (CRL). It was suggested that the following words should be added to subparagraph (d): "and ensure the operation of a prompt and immediate revocation service". Support was expressed in favour of that suggestion. It was pointed out, however, that the obligation to operate a CRL might be appropriate for high-value transactions and certificates (i.e., for those "enhanced electronic signatures" that were intended to produce legal effect) but would be overly burdensome (and contrary to existing practice) if it were to be imposed with respect to all certificates (including "cheap certificates" used in the context of significant numbers of digital signatures). In that connection, it was recalled that one of the main difficulties of the current project was to establish a workable criterion for distinguishing between the higher level of transactions (for which a high level of security was sought, through stringent requirements on certificates and certification authorities, possibly with the view of producing specific, pre-determined, legal effects) and the bulk of lower-level uses of digital signatures and certificates (where the production of legal effects as to "signature" was largely irrelevant, and the main policy requirement was not to interfere with party autonomy). The view was expressed that, while no such workable criterion might be found, limiting the scope of the Uniform Rules to the commercial sphere (i.e., excluding consumer transactions) might provide an acceptable solution.

114. Further suggestions were made for reflecting additional elements in the list of duties established under paragraph (1) as follows: an obligation to provide information as to the revocation and suspension of certificates; in subparagraph (e), language mirroring a similar provision in draft article F; and in subparagraph (f), language expressing the obligation of the certification authority to utilize trustworthy human resources in performing its services. The following text was proposed for insertion in paragraph (1)(c): "that the person who is named in the certificate holds [held at the relevant time] the private key corresponding to the public key", and "that the keys are a functioning key pair".

Paragraph (2)

115. With respect to the general provision concerning the liability of the certification authority for failure to fulfil the duties established under paragraph (1), it was widely felt that it would be appropriate to create a uniform rule beyond merely referring to the applicable law. As to what the contents of such a rule might be, it was suggested that it should establish a general liability for negligence, subject to possible contractual exemptions, and subject to the certification authority exonerating itself from liability by demonstrating that it had fulfilled the obligations under paragraph (1). The following text was proposed as a substitute for paragraph (2):

"(2) Subject to paragraph (3), a certification authority shall be liable for damage suffered by either:

(a) a party who has contracted with the certification authority for the provision of a certificate; or

(b) any person who relies on a certificate issued by the certification authority, if the damage has been caused as a result of the certificate being incorrect or defective.

"(3) A certification authority shall not be liable under paragraph (2):

(a) if, and to the extent, it included in the certificate's information a statement limiting the scope or extent of its liability to any person; or

(b) if it proves that it [was not negligent][took all reasonable measures to prevent the damage]"

116. While support was expressed in favour of the proposal, strong objections were raised on the grounds that adopting the proposed language would amount to establishing a strict liability standard for "any damage", and that imposing a strict liability standard on certification authorities might significantly jeopardize the increased use of electronic commerce. With respect to the text of proposed subparagraph (3)(a), doubts were expressed as to whether information included in the certificate to the effect of limiting the liability of the certification authority with respect to that certificate could apply equally to contractual and tortious liability. In that context, the Working Group was urged not to attempt to base any meaningful distinction in the Uniform Rules on the notions of contractual and tortious liability, since the contents of those notions might vary significantly from country to country. Furthermore, a view was expressed that the clause limiting the liability of the certification authority ought not to be invoked to the extent that exclusion or limitation of liability would be grossly unfair. That view was supported by some delegations.

117. Support was also expressed in favour of maintaining the current structure of paragraph (2), in connection with an exhaustive list of duties under paragraph (1).

118. In connection with the discussion of the duties of the certification authority, a question was raised as to who would bear the risk of a loss resulting from reliance on an unreliable (e.g., a compromised or revoked) certificate when all parties had been diligent under draft articles F, G and H of the Uniform Rules. One suggestion was that, through the suggested negative formulation of draft article G, the relying party would bear that residual risk. It was pointed out that, in practice, reliance on means of communication such as telephone or telecopy already placed the residual risk on the relying party. Another suggestion was that provisions should be introduced in draft article H to the effect that the residual risk should be borne by the certification authority. Yet another suggestion was that the Uniform Rules should be silent on that point and leave it to the courts to determine which party should bear that risk, in view of all relevant circumstances.

119. After discussion, the Working Group did not adopt a final decision on the contents of draft article H. The Secretariat was requested to prepare variants reflecting the various views expressed, for continuation of the debate at a later session.

C. FURTHER ITEMS TO BE CONSIDERED

120. The Working Group proceeded to list the items which, for lack of time, had not been considered at that session but should be further discussed in the context of possible additions to the Uniform Rules. The view was expressed that, in its future deliberations of the Uniform Rules, the Working Group might wish to give consideration to introducing an article to establish that certificates should not be discriminated against on the basis of the place at which they were issued. The following text was proposed: "In determining whether, or the extent to which, a certificate is legally effective, no regard shall be had to where the certificate was issued, nor in which State the issuer had its place of business". The Working Group took note of that proposal.

121. Other items for future consideration included the following issues: cross-border recognition of certificates; legal effect of electronic signatures, attribution of electronic signatures, relationship between the Uniform Rules and the Model Law, definition and minimum qualities of certification authorities; possible incompatibility of functions of certification authorities with the performance of any other function in the same transaction; and revocation and suspension of certificates.

122. It was noted that the next session of the Working Group was scheduled to take place at Vienna from 6 to 17 September 1999, those dates being subject to confirmation by the Commission at its thirty-second, to be held at Vienna, from 17 May to 4 June 1999. A suggestion was made on behalf of a number of delegations that the duration of future sessions of the Working Group should be limited to one week and that this matter should be fully discussed at the thirty-second session of the Commission. The suggestion was noted by the Working Group as a matter that could only be decided upon by the Commission.

Notes

¹ Official Records of the General Assembly, Fifty-first Session, Supplement No. 17 (A/51/17), paras. 223-224.

² Ibid., Fifty-second Session, Supplement No. 17 (A/52/17), paras. 249-251.

³ Ibid., Fifty-third Session, Supplement No. 17 (A/53/17), paras. 207-211.



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PRIVATELY FINANCED INFRASTRUCTURE PROJECTS

Draft chapters of a legislative guide on privately financed infrastructure projects

Report of the Secretary-General

I. INTRODUCTION

1. At its twenty-ninth session, in 1996, after consideration of the note by the Secretariat on build-operate-transfer (BOT) projects (A/CN.9/424), the United Nations Commission on International Trade Law decided to prepare a legislative guide to assist States in preparing or modernizing legislation relevant to those projects.¹ The Commission requested the Secretariat to review issues suitable for treatment in such a legislative guide and to prepare draft materials for consideration by the Commission.

2. At its thirtieth session, in 1997, the Commission considered an annotated table of contents setting out the topics proposed for inclusion in the legislative guide (A/CN.9/438, annex). The Commission also considered initial drafts of chapters I, "Scope, purpose and terminology of the *Guide*" (A/CN.9/438/Add.1), II, "Parties and phases of privately financed infrastructure projects" (A/CN.9/438/Add.2), and V, "Preparatory measures" (A/CN.9/438/Add.3), of the guide. After an exchange of views on the nature of the issues to be discussed and possible methods for addressing them in the guide, the Commission generally approved the line of work proposed by the Secretariat, as contained in those documents.² The Commission requested the Secretariat to seek

¹Official Records of the General Assembly, Fifty-first Session, Supplement No. 17 (A/51/17), paras. 225-230.

²Ibid., Fifty-second Session, Supplement No. 17 (A/52/17), paras. 231-247.

the assistance of outside experts, as required, in the preparation of future chapters and invited Governments to identify experts who could be of assistance to the Secretariat in that task.

3. At its thirty-first session, in 1998, the Commission had before it revised versions of the earlier chapters, as well as initial drafts of additional chapters, which had been prepared by the Secretariat with the assistance of outside experts and in consultation with other international organizations. The documents included a revised table of contents (A/CN.9/444) and a draft of the introduction to the legislative guide (A/CN.9/444/Add.1), which combined, with amendments, the contents of documents A/CN.9/438/Add.1 and 2. Further documents included initial drafts of chapters I, "General legislative considerations" (A/CN.9/444/Add.2); II, "Sector structure and regulation" (A/CN.9/444/Add.3); III, "Selection of the concessionaire" (A/CN.9/444/Add.4); and IV, "Conclusion and general terms of the project agreement" (A/CN.9/444/Add.5), which incorporated some of the contents of document A/CN.9/438/Add.3. The Commission considered various specific suggestions concerning the draft chapters, as well as proposals for changing the structure of the legislative guide and reducing the number of chapters.³ The Commission requested the Secretariat to continue the preparation of future chapters, with the assistance of outside experts, for submission to the Commission at its thirty-second session.

4. Pursuant to that request, the Secretariat has changed the overall structure of the legislative guide, combined some of its chapters, revised the documents considered by the Commission at its thirty-first session and prepared initial drafts of the remaining chapters, with the assistance of outside experts and in consultation with other international organizations. The complete draft of the legislative guide is contained in addenda 1-9 to the present document (A/CN.9/458/Add.1-9).

II. PROPOSED STRUCTURE AND CONTENTS OF THE LEGISLATIVE GUIDE

Introduction and background information on privately financed infrastructure projects

5. An earlier draft of the introduction was contained in document A/CN.9/444/Add.1. A revised draft, which takes into account suggestions made at the thirty-first session of the Commission,⁴ is contained in an addendum to the present document (A/CN.9/458/Add.1).

6. In preparing the revised introduction, the Secretariat paid particular attention to the suggestion made at the thirty-first session of the Commission that some portions of the introduction were lengthy and could usefully be reduced, in particular those which anticipated to some extent issues that would be discussed in more detail in the substantive chapters.⁵

7. The revised introduction incorporates some of the contents of former chapter II, "Sector structure and regulation" (A/CN.9/444/Add.3), pursuant to the Commission's decision, at its thirty-first session, to move the substance of the discussion on competition and sector structure, then contained in sections A, "Market structure and competition", and B, "Legislative measures to implement sector reform", of that chapter to the introductory part of the guide.⁶

³Ibid., *Fifty-third Session, Supplement No. 17* (A/53/17), paras. 12-206.

⁴Ibid., paras. 23-49.

⁵Ibid., paras. 32 and 47.

⁶Ibid., paras. 101 and 102.

Chapter I. General legislative considerations

8. An earlier draft of chapter I was contained in document A/CN.9/444/Add.2. A revised draft, which takes into account suggestions made at the thirty-first session of the Commission,⁷ is contained in an addendum to the present document (A/CN.9/458/Add.2).

9. Section D of draft chapter I incorporates the substance of some portions of former chapter II, "Sector structure and regulation" (A/CN.9/444/Add.3), that dealt with organizational and administrative matters pertaining to the functioning of regulatory bodies.

10. Document A/CN.9/444/Add.2 contained, in its sections B and C, a discussion on the possible impact of other areas of legislation on the successful implementation of privately financed infrastructure projects and the possible relevance of international agreements entered into by the host country for domestic legislation on those projects. That discussion has been moved to draft chapter VII, "Governing law" (A/CN.9/458/Add.8).

Chapter II. Project risks and government support

11. An initial draft of chapter II (previously numbered chapter V) is contained in an addendum to the present document (A/CN.9/458/Add.3).

12. Section B of draft chapter II provides an overview of the main risks encountered in privately financed infrastructure projects and a brief discussion of common contractual solutions for risk allocation. Section C sets out policy considerations the Government may wish to take into account when designing the level of direct government support that may be provided to infrastructure projects and discusses some additional support measures that have been used in government programmes to promote private investment in infrastructure development, without advocating the use of any of them in particular. Lastly, sections D and E outline guarantees and support measures that may be provided by international and bilateral financial institutions.

Chapter III. Selection of the concessionaire

13. An earlier version of this chapter was contained in document A/CN.9/444/Add.4. A revised draft, which takes into account suggestions made at the thirty-first session of the Commission,⁸ is contained in an addendum to the present document (A/CN.9/458/Add.4).

14. In preparing the revised version of draft chapter III, the Secretariat paid particular attention to the suggestion made at the thirty-first session of the Commission that the chapter should elaborate further on the fact that competitive procedures typically used for the procurement of goods, construction or services were not entirely suitable for privately financed infrastructure projects.⁹ The Secretariat has endeavoured to avoid the use of terminology that in some legal systems is normally used in connection with procurement methods for the acquisition of goods, construction and services. Extensive revisions were made, in particular, to the sections dealing with pre-selection criteria, the contents of the final requests for proposals, evaluation criteria, procedures for opening and evaluating proposals, direct negotiations, unsolicited proposals and review procedures. The

⁷Ibid., paras. 50-95.

⁸Ibid., paras. 123-175.

⁹Ibid., para. 129.

revised draft chapter also includes a new subsection dealing with measures to enhance transparency in direct negotiations.

Chapter IV. The project agreement

15. An earlier version of this chapter was contained in document A/CN.9/444/Add.5. A revised draft, which takes into account suggestions made at the thirty-first session of the Commission,¹⁰ is contained in an addendum to the present document (A/CN.9/458/Add.5).

Chapter V. Infrastructure development and operation

16. An initial draft of chapter V is contained in an addendum to the present document (A/CN.9/458/Add.6). The draft chapter combines issues previously proposed for discussion in separate chapters.¹¹

17. Issues discussed in the draft chapter include legal issues relating to subcontracting and the construction phase (previously proposed for inclusion in a separate chapter entitled "Construction phase"); conditions of operation of the infrastructure facility, level and quality of services, tariff structure and price adjustment provisions (previously proposed for inclusion in a separate chapter entitled "Operational phase"); provision and remedies in the event of default or breach of the project agreement, provisions dealing with changes in conditions and unforeseen events, performance guarantees and insurance obligations of the concessionaire (previously proposed for inclusion in a separate chapter entitled "Delays, defects and other failures to perform").

18. In line with the Commission's decision at its thirty-first session to move the substance of the discussion on regulatory issues that was contained in section C of former chapter II, "Sector structure and regulation" (A/CN.9/444/Add.3), to a future chapter dealing with the operational phase,¹² draft chapter V contains a section dealing with a number of regulatory issues such as general duties of public service providers and price control measures.

Chapter VI. End of project term, extension and termination

19. An initial draft of chapter VI (previously numbered chapter IX) is contained in an addendum to the present document (A/CN.9/458/Add.7).

20. Section B deals with the question of whether and under what circumstances the project agreement may be extended. Section C considers circumstances that may authorize the termination of the project agreement prior to the expiry of its term. Lastly, section D deals with provisions for the winding-up of the project, including the transfer of project assets and the compensation to which either party may be entitled in the event of termination of the project agreement.

¹⁰*Ibid.*, paras. 176-201.

¹¹See A/CN.9/444, paras. 21-24.

¹²*Official Records of the General Assembly, Fifty-third Session, Supplement No. 17 (A/53/17)*, paras. 101 and 102.

Chapter VII. Governing law

21. An initial draft of chapter VII (previously numbered chapter X) is contained in an addendum to the present document (A/CN.9/458/Add.8).

22. Section B of the draft chapter deals with the choice of law or laws governing the project agreement and other contracts entered into by the concessionaire during the life of the project. Section C points out a few selected aspects of the laws of the host country that, without necessarily dealing directly with privately financed infrastructure projects, may have an impact on their implementation. Section D indicates the possible relevance of a number of international agreements for the implementation of privately financed infrastructure projects in the host country. The substance of sections C and D was previously contained in an earlier version of chapter I, "General legislative considerations" (A/CN.9/444/Add.2).

Chapter VIII. Settlement of disputes

23. An initial draft of chapter VIII (previously numbered chapter XI) is contained in an addendum to the present document (A/CN.9/458/Add.9).

24. Section B of the draft chapter deals with mechanisms for the settlement of disputes between the concessionaire and the contracting authority. Section C deals with disputes between the concessionaire and other parties, such as its contractors, suppliers, lenders and customers. Lastly, section D deals with conciliation and similar methods of solving disputes.

III. CONCLUSIONS

25. The Commission may wish to note that the proposed timetable for the thirty-second session of the Commission, as set out in the provisional agenda (A/CN.9/453), provides for the first eight days of the session to be devoted to a discussion of the subject of privately financed infrastructure projects. It is suggested that the Commission use that period for an in-depth consideration of the draft chapters, in particular the revised structure of the legislative guide, whether the draft chapters cover the relevant issues, whether statements made adequately address the practical needs of privately financed infrastructure projects and whether the advice given is appropriate. The Commission may wish to consider whether the legislative recommendations, as currently formulated, adequately reflect the notion of concise legislative principles, as contemplated by the Commission.¹³ The Commission may also wish to identify any other issues for which the formulation of model legislative provisions would increase the value of the legislative guide.¹⁴

¹³Ibid., para. 204.

¹⁴Ibid., para. 21.



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Draft chapters of a legislative guide on privately financed infrastructure projects

Report of the Secretary-General

Addendum

INTRODUCTION AND BACKGROUND INFORMATION ON PRIVATELY FINANCED INFRASTRUCTURE PROJECTS*

*Sections C, D, E and F discuss basic issues of privately financed infrastructure projects, such as private sector participation in public infrastructure and the concept of project finance. They also identify the main parties involved in those projects and their respective interests, and consider policy options concerning sector structure and competition. These sections are conceived as general background information on matters that are examined from a legislative perspective in the subsequent chapters of the *Guide*. For additional information, the reader is particularly advised to consult publications by other international organizations, such as the *Guidelines for Infrastructure Development through Build-Operate-Transfer (BOT) Projects*, prepared by the United Nations Industrial Development Organization (UNIDO Publication, Sales No. UNIDO.95.6.E), the *World Development Report 1994: Infrastructure for Development* (New York, Oxford University Press, 1994) and the *World Development Report 1996: From Plan to Market* (New York, Oxford University Press, 1996), both published by the World Bank, or *Financing Private Infrastructure* (Washington, D.C., 1996), published by the International Finance Corporation.

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A. Purpose and scope of the *Guide*

1. The purpose of the present *Guide* is to assist national authorities and legislative bodies wishing to establish a legal framework favourable to the development of public infrastructure through private investment. The *Guide* is intended to be used as a reference in the preparation of new laws or in the review of the adequacy of existing laws and regulations. For that purpose, the *Guide* helps identify areas of law that are typically most relevant to private capital investment in public infrastructure projects and discusses the content of those laws which would be conducive to attracting private capital, national and foreign.

2. The *Guide* does not provide a single set of model solutions, but it helps the reader to evaluate different approaches available and to choose the one most suitable in the national or local context. The advice provided

in the *Guide* aims at achieving a balance between the desire to facilitate and encourage private participation in infrastructure projects, on the one hand, and various public interest concerns of the host country, on the other.

3. The *Guide* is not intended to provide advice on drafting agreements for the execution of privately financed infrastructure projects or on contractual solutions for problems that arise under such agreements. Where the *Guide* discusses contractual issues (for instance, in chaps. IV, "The project agreement", V, "Infrastructure development and operation", and VI, "End of project term, extension and termination") the focus of the discussion is on matters that might usefully be addressed in the legislation, in addition to being dealt with in the relevant agreements.

4. The *Guide* pays special attention to infrastructure projects that involve an obligation, on the part of the selected investors, to undertake physical construction, repair or expansion works in exchange for the right to charge a price, either to the public or to a governmental agency, for the use of the infrastructure facility or for the services it generates. Although such projects are sometimes grouped with other transactions for the "privatization" of governmental functions or property, the *Guide* is not concerned with "privatization" transactions that do not relate to the development and operation of public infrastructure. In addition, the *Guide* does not address projects for the exploitation of natural resources, such as mining, oil or gas exploitation projects under some "concession", "licence" or "permission" issued by the Government of the host country. Although such projects often involve long-term contractual arrangements between the investors and the public authorities of the host country, the award procedures are in most cases different from those commonly used for selecting a company to carry out a public infrastructure project. By the same token, the function of a concessionaire of natural resources, as a commodity producer, is quite distinct from the position of a concessionaire in a privately financed infrastructure project.

B. Terminology used in the *Guide*

5. The following paragraphs explain the meaning and use of certain expressions that appear frequently in the *Guide*. For terms not mentioned below, such as technical terms used in financial and business management writings, the reader is advised to consult other sources of information on the subject, such as the *Guidelines for Infrastructure Development through Build-Operate-Transfer (BOT) Projects* prepared by the United Nations Industrial Development Organization (UNIDO).¹

1. "Public infrastructure" and "public services"

6. "Public infrastructure" refers to physical facilities that provide public services to the public or the Government. Examples of public infrastructure in this sense may be found in various sectors and include various types of facility, equipment or system: power generation plants and power distribution networks (electricity sector); systems for local and long-distance telephone communications and data transmission networks (telecommunications sector); desalination plants, waste water treatment plants, water distribution facilities (water sector); facilities and equipment for waste collection and disposal (sanitation sector); and physical installations and systems used for public transportation, such as urban and inter-urban railways, underground trains, bus lines, roads, bridges, tunnels, ports, airlines and airports (transportation sector).

7. The line between "public" and "private" infrastructure must be drawn by each country as a matter of public policy. What distinguishes public infrastructure from other types of facility and operating equipment is the expressed policy conclusion of the Government concerned that the facility in question is infused with a public interest because it provides services essential to the general public. In some countries, airports are owned by the Government; in others they are privately owned but subject to regulation or to the terms of an agreement with an agency of the Government. Hospital and medical facilities, prison and correctional facilities may be regarded as "public" or "private" infrastructure, depending on the country's tradition. Often, but not always,

power and telecommunication facilities are regarded as "public" infrastructure. No view is expressed in the *Guide* as to where the line should be drawn in a particular country.

8. Public infrastructure projects typically entail the provision of services or goods to the public (or to an intermediary who distributes them to the public) or the operation or maintenance of a facility open to public use. Such activities are often referred to under national law as "public services" and, according to the legal tradition of the country concerned, their providers may be referred to as "public utilities", "public services enterprises" or "public service providers". It should be noted, however, that those expressions are not uniformly understood and may encompass different activities in different legal systems. While infrastructure projects as defined above would, under most legal systems, involve some form of "public service", this expression may also be used in connection with a number of other activities not covered by the *Guide*.

9. The notions of "public infrastructure" and "public services" are well established in the legal tradition of some countries, being sometimes the subject of constitutional law or detailed statutory provisions. In some countries, the provision of public services may be governed by a specific body of law, which is typically referred to as "administrative law" (see chap. I, "General legislative considerations", ____). However, such a high degree of specificity is not present in all legal systems. In a number of countries, apart from being subject to special regulations, public services are not regarded as being intrinsically distinct from other types of business. As used in this *Guide*, the expression "public services" refers to services provided in connection with public infrastructure or as a result of its operation. The expression "public service providers" refers to the legal entities responsible for the management of infrastructure facilities or systems that supply those public services. As used in this *Guide*, the expressions should not be understood in a technical sense that may be attached to them under any particular legal system.

2. "Concession", "project agreement" and related expressions

10. In many countries, public services constitute government monopolies or are otherwise subject to special regulation by the Government. Where that is the case, the provision of a public service by an entity other than the Government typically requires an act of authorization by the appropriate governmental body. Different expressions are used to define such acts of authorization under national laws and in some legal systems different expressions may be used to denote different types of authorizations. Commonly used expressions include terms such as "concession", "franchise" or "licence". In some legal systems, in particular those belonging to the civil law tradition, certain forms of infrastructure projects are referred to by well-defined legal concepts such as "public works concession" or "public service concession". The *Guide* uses the word "concession" to refer generally to the right to construct and operate or only to operate a public infrastructure facility and to charge for its use or for the services it generates. As used in the *Guide*, the word "concession" is not to be understood in a technical sense that may be attached to it under any particular legal system or domestic law.

11. As used in the *Guide*, the term "project agreement" means an agreement between an agency of the Government and the entity or entities selected by that agency to carry out the project that sets forth the terms and conditions for the construction or modernization, operation and maintenance of the infrastructure. Other expressions that may be used in some legal systems to refer to such an agreement, such as "concession agreement" or "concession contract", are not used in the *Guide*.

12. The *Guide* sometimes uses the word "concessionaire" to refer generally to entities that carry out public infrastructure projects under a concession issued by the public authorities of the host country. However, when referring specifically to the independent legal entity especially established by the selected bidding consortium for the purpose of carrying a particular project, the term "project company" is used instead.

13. The expression "bidding consortium" refers to a group of companies that submits a joint proposal for the development of an infrastructure project and agrees to carry it out jointly if awarded the project by the Government. Those companies are sometimes also referred to as the "project sponsors".

3. *References to national authorities*

14. The expression "contracting authority" is generally used in the *Guide* to refer to the public authority of the host country that has the overall responsibility for the project and on behalf of which the project is awarded. Such authority may be national, provincial or local.

15. As used in the *Guide*, the word "Government" encompasses the various public authorities of the host country entrusted with executive or policy-making functions, at the national, provincial or local level. The words "public authorities" or "governmental agencies" are used to refer, in particular, to entities of, or related to, the executive branch of the Government. The expression "legislature" is used specifically with reference to the organs that exercise legislative functions in the host country.

16. The expression "regulatory body" is used in the *Guide* to refer to the governmental organ or entity that is entrusted with the authority to issue rules and regulations governing the operation of the infrastructure. The regulatory body may be established by statute with the specific purpose of regulating a particular infrastructure sector.

4. *"Build-operate-transfer" and related expressions*

17. The various types of projects referred to in this *Guide* as privately financed infrastructure projects are sometimes divided into several categories, according to the type of private participation or the ownership of the relevant infrastructure, as indicated below:

(a) "*Build-operate-transfer*" (BOT). An infrastructure project is said to be a BOT project when the contracting authority selects a concessionaire to finance and construct an infrastructure facility or system and gives the entity the right to operate it commercially for a certain period, at the end of which the facility is transferred to the contracting authority;

(b) "*Build-transfer-operate*" (BTO). This expression is sometimes used to emphasize that the infrastructure facility becomes the property of the contracting authority immediately upon its completion, the concessionaire being awarded the right to operate the facility for a certain period;

(c) "*Build-rent-operate-transfer*" (BROT) or "*build-lease-operate-transfer*" (BLOT). These are variations of BOT or BTO projects where, in addition to the obligations and other terms usual to BOT projects, the concessionaire rents the physical assets on which the facility is located for the duration of the agreement;

(d) "*Build-own-operate-transfer*" (BOOT). These are projects in which a concessionaire is engaged for the financing, construction, operation and maintenance of a given infrastructure facility in exchange for the right to collect fees and other charges from its users. In contrast to BOT projects, under this arrangement the private entity owns the facility and its assets until it is transferred to the contracting authority;

(e) "*Build-own-operate*" (BOO). This is a variation of BOOT projects where the concessionaire owns the facility permanently and is not under an obligation to transfer it back to the contracting authority.

18. Besides acronyms used to highlight the particular ownership regime, other acronyms may be used to emphasize one or more of the obligations of the concessionaire. In some projects, existing infrastructure

facilities are turned over to private entities to be modernized or refurbished, operated and maintained permanently or for a given period of time. Depending on whether the private sector will own the infrastructure facility, those arrangements may be called either "refurbish-operate-transfer" (ROT), "modernize-operate-transfer" (MOT), in the first case, or "refurbish-own-operate" (ROO) or "modernize-own-operate" (MOO), in the latter. The expression "design-build-finance-operate" (DBFO) is sometimes used to emphasize the concessionaire's additional responsibility for designing the facility and financing its construction.

C. Forms of private sector participation in infrastructure projects

19. Private sector participation in infrastructure projects may be devised in a variety of different forms, ranging from publicly owned and operated infrastructure to fully privatized projects. The appropriateness of a particular variant for a given type of infrastructure is a matter to be considered by the Government in view of the specific needs for infrastructure development and an assessment of the most efficient ways in which particular infrastructure facilities may be developed and operated (see paras. 54-82). In a particular sector model, a particular option may be used.

1. Public ownership and operation

20. In cases where public ownership and control is desired, direct private financing as well as infrastructure operation under commercial principles may be achieved by establishing a separate legal entity controlled by the Government to own and operate the project. Such an entity may be managed as an independent commercial enterprise that is subject to the same rules and business principles that apply to private companies. Some countries have a well established tradition in operating infrastructure facilities through the company. Opening the capital of such companies to private investment, or making use of such a company's ability to issue bonds or other securities may create an opportunity for attracting private investment in infrastructure.

21. Another form of involving private participation in publicly owned and operated infrastructure is the negotiation of "service contracts" whereby the public operator contracts out specific operation and maintenance activities to the private sector. The Government may also entrust a broad range of operation and maintenance activities to a private entity acting on behalf of the contracting authority. Under such an arrangement, which is sometimes referred to as a "management contract", the private operator's compensation may be linked to performance, often through a profit-sharing mechanism, although compensation on the basis of a fixed fee may also be used, in particular where the parties find it difficult to establish mutually acceptable mechanisms to assess the operator's performance.

2. Public ownership and private operation

22. Alternatively, the whole operation of public infrastructure facilities may be transferred to private entities. One possibility is to give the private entity, usually for a certain period, the right to use a given facility to supply the relevant services and to collect the revenue generated by that activity. Such a facility may already be in existence or may have been specially built by the private entity concerned. This combination of public ownership and private operation has the essential features of arrangements that in some legal systems are referred to as "public works concessions" or "public service concessions".

23. Another form of private participation in infrastructure is where a private entity is selected by the contracting authority to operate a facility that has been built by or on behalf of the Government. If the construction has been financed with public funds. Under such an arrangement, the operator assumes the obligation to operate and maintain the infrastructure and is granted the right to charge for the services it provides. In such a case, the operator assumes the obligation to pay to the contracting authority a portion of the revenue generated.

revenue generated by the infrastructure that is used by the contracting authority to amortize the construction cost. Such arrangements are referred to in some legal systems as "lease" or "*affermage*".

24. In a number of countries some types of publicly owned infrastructure are rarely taken over by the contracting authority at the end of the concession period since the contracting authority usually prefers to maintain that facility under private operation. In those cases, the private use and possession of public assets, which was originally awarded for a definite period, may, in practice, become indefinite (see chap. VI, "End of project term, extension and termination", ____).

3. Private ownership and operation

25. Under the third approach, the private entity not only operates the facility, but also owns the assets related to it. Here, too, there may be substantial differences in the treatment of those projects under domestic laws, for instance as to whether the contracting authority retains the right to reclaim title to the facility or to assume responsibility for its operation (see also chap. V, "Infrastructure development and operation", ____).

26. Where the facility is operated pursuant to a governmental licence, private ownership of physical assets (e.g. a telecommunication network) is often separable from the licence to provide the service to the public (e.g. long-distance telephone services), in that the licence can be withdrawn by the Government under certain circumstances. Thus, private ownership of the facility may not necessarily entail an indefinite right to provide the service.

D. Financing structures and sources of finance for infrastructure projects

1. Notion of project finance

27. In traditional financing transactions, the lenders typically rely on the overall creditworthiness of the borrower and are protected against failure of the project by guarantees provided by the borrower's shareholders or their parent companies. This form of financing is usually described as "corporate finance" or "balance-sheet" finance, to emphasize that the amounts borrowed to finance the project become a corporate liability of the concessionaire's shareholders. Corporate finance would typically be provided to borrowers with a sufficiently strong credit to stand the risk of project failure.

28. However, for large-scale projects involving the construction of new infrastructure facilities, the project company's shareholders are typically not ready to guarantee this. Such projects are therefore often carried out as "project finance", where the repayment of loans taken out by the borrower is assured primarily by the revenue generated by the project. Other guarantees either are absent or cover only certain limited risks. To that end, the project's assets and revenue, and the rights and obligations relating to the project, are independently estimated and are strictly separated from the assets of the project company's shareholders.

29. Project finance is said to be "non-recourse" financing owing to the absence of recourse to the project company's shareholders. In practice, however, lenders are seldom ready to commit the large amounts needed for infrastructure projects solely on the basis of a project's expected cash flow or assets. The lenders may reduce their exposure by incorporating into the project documents a number of back-up or secondary security arrangements and other means of credit support provided by the project company's shareholders, the Government, purchasers or other interested third parties. This modality is commonly called "limited recourse" financing.

2. Financing sources for infrastructure projects

30. Alternatives to traditional public financing are playing an increasing role in the development of infrastructure. In recent years, new infrastructure investment in various countries has included projects with exclusively or predominantly private funding sources. The two main types of fund are debt finance, usually in the form of loans obtained on commercial markets, and equity investment. However, financing sources are not limited to those. Public and private investment have often been combined in arrangements sometimes called "public-private partnerships".

(a) Equity capital

31. The first type of capital for infrastructure projects is provided in the form of equity investment. Equity capital is obtained in the first place from the project sponsors or other individual investors interested in taking stock in the concessionaire. However, such equity capital normally represents only a portion of the total cost of an infrastructure project. In order to obtain commercial loans or to have access to other sources of funds to meet the capital requirements of the project, the project sponsors and other individual investors have to offer priority payment to the lenders and other capital providers, thus accepting that their own investment will only be paid after payment of those other capital providers. Therefore, the project sponsors, as the main promoters of the project, typically assume the highest financial risk. At the same time, they will hold the largest share in the project's profit once the initial investment is paid. Substantial equity investment by the project sponsors is typically welcomed by the lenders and the Government, as it helps reduce the burden of debt service on the concessionaire's cash flow and serves as an assurance of those companies' commitment to the project.

(b) Commercial loans

32. Debt capital often represents the main source of funding for infrastructure projects. It is obtained on the financial market primarily by means of loans extended to the project company by national or foreign commercial banks, typically using funds that originate from short- to medium-term deposits remunerated by those banks at floating interest rates. Consequently, loans extended by commercial banks are often subject to floating interest rates and normally have a maturity term shorter than the project period. However, where feasible and economic, given financial market conditions, banks may prefer to raise and lend medium- to long-term funds at fixed rates, so as to avoid exposing themselves and the concessionaire over a long period to interest rate fluctuations, while also reducing the need for hedging operations.

33. Commercial loans are usually provided by lenders on condition that their payment takes precedence over the payment of any other of the borrower's liabilities. Therefore, commercial loans are said to be "unsubordinated" or "senior" loans. Senior loans may be divided into "unsecured" and "secured" loans according to whether their payment is guaranteed by any security provided by the borrower. Unsecured loans (i.e. loans that are not guaranteed by any security offered by the borrower) are typically provided on account of the borrower's creditworthiness. However, with a view to minimizing their exposure, lenders providing unsecured loans often require an undertaking from the borrower that its net assets will not be pledged in favour of another party in preference to the unsecured creditors. Such an undertaking is usually referred to as a "negative pledge". Secured loans, in turn, are typically guaranteed by collaterals provided by the borrower, such as shares of the project company or its property and receivables. The borrower's ability to offer such types of security and the creditworthiness of the borrower and their guarantors typically limit the risk to which the lenders are exposed, thus reducing the cost at which the credit is offered.

(c) "Subordinated" debt

34. The third type of fund typically used in these projects are "subordinated" loans, sometimes also called "mezzanine" capital. Such loans rank higher than equity capital in order of payment, but are subordinate to senior loans. This subordination may be general (i.e. ranking generally lower than any senior debt) or specific, in which case the loan agreements specifically identify the type of debt to which it is subordinated. Subordinated loans are often provided at fixed rates, usually higher than those of senior debt. As an additional tool to attract such capital, or sometimes as an alternative to higher interest rates, providers of subordinated loans may be offered the prospect of direct participation in capital gains, by means of the issue of preferred or convertible shares or debentures, sometimes providing an option to subscribe for shares of the concessionaire at preferential prices.

(d) Institutional investors

35. In addition to subordinated loans provided by the project sponsors or by governmental financial institutions, subordinated debt may be obtained from financing companies, investment funds, insurance companies, collective investment schemes (e.g. mutual funds), pension funds and other so-called "institutional investors". These institutions normally have large sums available for long-term investment and may represent an important source of additional capital for infrastructure projects. Their main reasons for accepting the risk of providing capital to infrastructure projects are the prospect of remuneration and interest in diversifying investment.

(e) Capital market funding

36. As more experience is gained with privately financed infrastructure projects, increased use is being made of capital market funding. Funds may be raised by the placement of preferred shares, bonds and other negotiable instruments on a recognized stock exchange. Typically, the public offer of negotiable instruments requires regulatory approval and compliance with requirements of the relevant jurisdiction, such as requirements concerning the information to be provided in the prospectus of issuance and, in some jurisdictions, the need for prior registration. Bonds and other negotiable instruments may have no other security than the general credit of the issuer or may be secured by a mortgage or other lien on specific property.

37. The possibility of gaining access to capital markets is usually greater for existing public utilities with an established commercial record than for companies specially established to build and operate a new infrastructure and lacking the required credit rating. Indeed, a number of stock exchanges require that the issuing company have some established record over a certain minimum period before being permitted to issue negotiable instruments.

(f) Financing by Islamic financial institutions

38. One additional group of potential capital providers are Islamic financial institutions. Those institutions operate under rules and practices derived from the Islamic legal tradition. One of the most prominent features of banking activities under their rules is the absence of interest payments and consequently the establishment of other forms of consideration for the borrowed money, such as profit sharing or direct participation of the financial institutions in the results of the transactions of their clients. As a consequence of their operating methods, Islamic financial institutions may be more inclined to consider direct or indirect equity participation in a project than other commercial banks.

(g) Financing by international financial institutions

39. International financial institutions may also play a significant role as providers of loans, guarantees or equity to privately financed infrastructure projects. A number of projects have been co-financed by the World Bank, the International Finance Corporation or by regional development banks.

40. International financial institutions may also play an instrumental role in the formation of "syndications" for the provision of loans to the project. Some of those institutions have special loan programmes under which they become the sole "lender of record" to a project, acting on its own behalf and on behalf of participating banks and assuming responsibility for processing disbursements by participants and for subsequent collection and distribution of loan payments received from the borrower, either pursuant to specific agreements or other rights that are available under their status of preferred creditor. Some international financial institutions may also provide equity or mezzanine capital, by investing in capital market funds specialized in securities issued by infrastructure operators. Lastly, international financial institutions may also provide guarantees against a variety of political risks, which may facilitate the project company's task of raising funds in the international financial market (see chap. II, "Project risks and government support", ____).

(h) Support by export credit agencies

41. Export credit agencies may provide support to the project in the form of loans, guarantees or a combination of both. The participation of export credit agencies may provide a number of advantages, such as lower interest rates than those applied by commercial banks and longer-term loans, sometimes at a fixed interest rate (see chap. II, "Project risks and government support", ____).

(i) Combined public and private finance

42. In addition to loans and guarantees extended by commercial banks and national or multilateral public financial institutions, in a number of cases public funds have been combined with private capital for financing new projects. Such public funds may originate from government income or sovereign borrowing. They may be combined with private funds as initial investment or as long-term payments, or may take the form of governmental grants or guarantees (see chap. II, "Project risks and government support", ____).

43. Infrastructure projects may be co-sponsored by the Government through equity participation in the concessionaire, thus reducing the amount of equity and debt capital needed from private sources. In some cases, Governments undertake to make direct payments to the concessionaire with a view to stimulating investment in projects perceived to be of high commercial risk. Private sector investment in new toll roads, for instance, may be discouraged by the fact that traffic forecasts, however professionally they may be prepared, are uncertain and depend on a number of unforeseeable factors. In order to attract investment to new projects deemed to be of public interest, some countries have introduced a system of direct payment by the Government of a flat sum established, for example, on the basis of a traffic estimate (see chap. IV, "The project agreement", ____).

E. Main parties involved in implementing infrastructure projects

44. The parties to a privately financed infrastructure project may vary greatly, depending on the infrastructure sector, the modality of private sector participation and the arrangements used for financing the project. The following paragraphs identify the main parties in the implementation of a typical privately financed infrastructure project involving the construction of a new infrastructure facility and carried out under the "project finance" modality.

1. The contracting authority and other agencies of the Government

45. The execution of a privately financed infrastructure project frequently involves a number of public authorities in the host country at the national, provincial or local level. The contracting authority is the main body responsible for the project within the Government. Furthermore, the execution of the project may necessitate the active participation (e.g. for the issuance of licences or permits) of other agencies in addition to the contracting authority, at the same or at a different level of Government. Those authorities play a crucial role in the execution of privately financed infrastructure projects.

46. The contracting authority or another agency of the Government normally identifies the project pursuant to its own policies for infrastructure development in the sector concerned and determines the type of private sector participation that would allow the most efficient operation of the infrastructure facility. Thereafter, the contracting authority conducts the process that leads to the selection of the concessionaire. Furthermore, throughout the life of the project, the Government may need to provide various forms of support—legislative, administrative, regulatory and sometimes financial—so as to ensure that the facility is successfully built and adequately operated. Finally, in some projects the Government may become the ultimate owner of the facility (___).

2. The project company and the project sponsors

47. Privately financed infrastructure projects are usually carried out by a joint venture of companies including construction and engineering companies and suppliers of heavy equipment interested in becoming the main contractors or suppliers of the project. The companies that participate in such a joint venture are often referred to as the "project sponsors". Those companies will be intensively involved in the development of the project during its initial phase and their ability to cooperate with each other and to engage other reliable partners will be essential for timely and successful completion of the work. Furthermore, the participation of a company with experience in operating the type of facility being built is an important factor to ensure the long-term viability of the project (see chap. V, "Infrastructure development and operation", ___). Where an independent legal entity is established by the project sponsors, other equity investors not otherwise engaged in the project (usually institutional investors, investment banks, bilateral or multilateral lending institutions, sometimes also the Government or a government-owned corporation) may also participate. The participation of private sector investors from the host country is sometimes encouraged by the Government.

3. Lenders

48. The risks to which the lenders are exposed in project finance, be it non-recourse or limited recourse, are considerably higher than in conventional transactions. This is even more the case where the security value of the physical assets involved (e.g. a road, bridge or tunnel) is difficult to realize, given the lack of a "market" where such assets could easily be sold or act as obstacles to recovery or repossession. This circumstance affects not only the terms under which the loans are provided (e.g. the usually higher cost of project finance and extensive conditions to funding), but also, as a practical matter, the availability of funds.

49. Owing to the magnitude of the investment required for a privately financed infrastructure project, loans are often organized in the form of "syndicated" loans with one or more banks taking the lead role in negotiating the finance documents on behalf of the other participating financial institutions, mainly commercial banks. Commercial banks that specialize in lending for certain industries are typically not ready to assume risks with which they are not familiar (for a discussion of project risks, see chap. II, "Project risks and government support", ___). For example, long-term lenders may not be interested in providing short-term loans to finance infrastructure construction. Therefore, in large-scale projects, different lenders are often involved at different phases of the project. With a view to avoiding disputes that might arise from conflicting actions taken by

individual lenders or disputes between lenders over payment of their loans, lenders extending funds to large projects typically negotiate a so-called "inter-creditor agreement". An inter-creditor agreement usually contains provisions dealing with matters such as provisions for disbursement of payments, pro rata or in a certain order of priority; conditions for declaring events of default and accelerating the maturity of credits; and coordination of foreclosure on security provided by the project company.

4. International financial institutions and export credit agencies

50. International financial institutions and export credit agencies will have concerns of generally the same order as other lenders to the project. In addition to this, they will be particularly interested in ensuring that the project execution and its operation are not in conflict with particular policy objectives of those institutions and agencies. Increasing emphasis is being given by international financial institutions to the environmental impact of infrastructure projects and their long-term sustainability. The methods and procedures applied to select the concessionaire will also be carefully considered by international financial institutions providing loans to the project. Many global and regional financial institutions and bilateral development funding agencies have established guidelines or other requirements governing procurement with funds provided by them, which is typically reflected in their standard loan agreements (see also chap. III, "Selection of the concessionaire", ____).

5. Insurers

51. Typically, an infrastructure project will involve casualty insurance covering its plant and equipment, third-party liability insurance and worker's compensation insurance. Other possible types of insurance include insurance for business interruption, interruption in cash flows and cost overrun insurance (see chap. V, "Infrastructure development and operation", ____). Those types of insurance are usually available on the commercial insurance markets, although the availability of commercial insurance may be limited for certain extraordinary events outside the control of the parties (e.g. war, riots, vandalism, earthquakes or hurricanes). The private insurance market is playing an increasing role in coverage against certain types of political risk, such as contract repudiation, failure by a governmental agency to perform its contractual obligations or unfair calls for independent guarantees. In some countries, insurance underwriters structure comprehensive insurance packages aimed at avoiding certain risks being left uncovered owing to gaps between individual insurance policies. In addition to private insurance, guarantees against political risks may be provided by international financial institutions, such as the World Bank, the Multilateral Investment Guarantee Agency and the International Finance Corporation, by regional development banks or by export credit agencies (see chap. II, "Project risks and government support", ____).

6. Independent experts and advisers

52. Independent experts and advisers play an important role at various stages of privately financed infrastructure projects. Experienced companies typically supplement their own technical expertise by retaining the services of outside experts and advisers, such as financial experts, outside international counsel or consulting engineers. Merchant and investment banks often act as advisers to project sponsors in arranging the finance and in formulating the project to be implemented, an activity that, while essential to project finance, is quite distinct from the financing itself. Independent experts may advise the lenders to the project, for example, on the assessment of project risks in a specific host country. They may also assist the Government in devising sector-specific strategies for infrastructure development and in formulating an adequate legal and regulatory framework. Furthermore, independent experts and advisers may assist the contracting authority in the preparation of feasibility and other preliminary studies, in the formulation of requests for proposals or standard contractual terms and specifications, in the evaluation and comparison of proposals or in the negotiation of the project agreement.

53. In addition to private entities, a number of intergovernmental organizations (e.g. UNIDO, the regional commissions of the Economic and Social Council) and international financial institutions (e.g. the World Bank and the regional development banks) have special programmes whereby they may either provide this type of technical assistance directly to the Government or assist the latter in identifying qualified advisers.

F. Infrastructure policy, sector structure and competition

54. The roles of the public and the private sectors in the development of infrastructure have evolved considerably in history. Public services such as gas street lighting, power distribution, telegraphy and telephony, steam railways and electrical tramways were launched in the nineteenth century and in many countries they were provided by private companies that had obtained a licence or concession from the Government. Numerous privately funded road or canal projects were carried out at that time and there was a rapid development of international project financing, including international bond offerings to finance railways or other major infrastructure.

55. However, during most of the twentieth century the international trend was, in turn, toward public provision of infrastructure and other services. Infrastructure operators were often nationalized and competition was reduced by mergers and acquisitions. The degree of openness of the world economy also receded during this period. Infrastructure sectors remained privately operated only in a relatively small number of countries, often with little or no competition. In many countries the pre-eminence of the public sector in infrastructure service provision became enshrined in the constitution (see chap. I, "General legislative considerations", ____).

56. The current reverse trend toward private sector participation and competition in infrastructure sectors started in the early 1980s and has been driven by general as well as country-specific factors. Among the general factors are significant technological innovations; high indebtedness and stringent budget constraints limiting the public sector's ability to meet increasing infrastructure needs; the expansion of international and local capital markets, with a consequent improvement in access to private funding; and an increasing number of successful international experiences with private participation and competition in infrastructure. In many countries, new legislation was adopted, not only to govern such transactions, but also to modify the market structure and the rules of competition governing the sectors in which they were taking place.

1. Private investment and infrastructure policy

57. In most of the countries that have recently built new infrastructure through private investment, privately financed infrastructure projects are an important tool in meeting national infrastructure needs. Essential elements of national policies include the level of competition sought for each infrastructure sector, the way in which the sector is structured and the mechanisms used to ensure adequate functioning of infrastructure markets. National policies to promote private investment in infrastructure are often accompanied by measures destined to introduce competition between public service providers or to prevent abuse of monopolistic conditions where competition is not feasible.

58. In devising programmes to promote private sector investment in the development and operation of public infrastructure, a number of countries have found it useful to review the assumptions under which public sector monopolies were established, including the historical circumstances and political conditions that had led to their creation, with a view to (a) identifying those activities which still maintain the characteristics of natural monopoly; and (b) assessing the feasibility and desirability of introducing competition in certain infrastructure sectors.

59. The measures that may be required to implement a governmental policy to promote competition in various infrastructure sectors will depend essentially on the prevailing market structure. The main elements that

characterize a particular market structure include barriers to the entry of competitors of an economic, legal, technical or other nature, the degree of vertical or horizontal integration, the number of companies operating in the market as well as the availability of substitute products or services.

(a) Competition policy and monopolies

60. The term monopoly in the strict sense refers to a market with only one supplier. However, pure monopoly and perfect competition mark two ends of a spectrum. Most markets for commodities or services are characterized by a degree of competition that lies between those two ends. Generally, monopolies can be classified as natural monopolies, legal monopolies and de facto monopolies; each of them may require different policy approaches:

(a) *Natural monopolies.* These are economic activities that allow a single provider to supply the whole market at a lower cost than two or more providers. This situation is typical for economic activities that entail large investment and high fixed costs, but decreasing costs of producing an additional unit of services (e.g. an additional cubic metre of water) to attend an increase of demand. Natural monopolies tend to exhibit large up-front fixed investment requirements that make it difficult for a new company, lacking comparable economies of scale, to enter the market and undercut the incumbent;

(b) *Legal monopolies.* Legal monopolies are established by law and may cover sectors or activities that are or are not natural monopolies. In the latter category, monopolies exist solely because competition is prohibited. The developments that had led many countries to the establishment of legal monopolies were often based on the consideration that national infrastructure needs, both in terms of quality and quantity, could not be adequately met by leaving infrastructure to the free market;

(c) *De facto monopolies.* These monopolies may not necessarily be the result of economic fundamentals or of legal provisions, but simply of the absence of competition, resulting, for example, from the integrated nature of the infrastructure company and its ability to control essential facilities to the exclusion of other suppliers.

61. Monopolies (of whatever form) have been found to have negative economic effects. A service provider operating under monopolistic conditions is typically able to fix prices. The surplus profit that results from insufficient competition implies a transfer of wealth from consumers to producers. Monopolies have also been found to cause a net loss of welfare to the economy as a result of inflated prices generated by artificially low production; a reduced rate of innovation; and insufficient efforts to reduce production costs. Furthermore, in particular in infrastructure sectors, there may be secondary effects on other markets. (For example, lack of competition and efficiency in telecommunications has negative repercussions on increases in cost for the economy at large.)

62. Despite their negative economic effects, monopolies and other regulatory barriers to competition have sometimes been maintained in the absence of natural monopoly conditions. One of the reasons cited for retaining monopolies is that they may be used to foster certain policy objectives, such as ensuring the provision of services in certain regions or to certain categories of consumer at low prices or even below cost. Examples of services for which the price may not cover costs include lifeline telephone, water or power service, discounted transport for certain categories of travellers (e.g. school children or senior citizens), as well as other services for low-income or rural users. A monopolistic service provider is able to finance the provision of such services through internal "cross-subsidies" from other profitable services provided in other regions or to other categories of consumers.

63. Another reason sometimes cited for retaining legal monopolies in the absence of natural monopoly conditions is to make the sector more attractive to private investors. Private operators may insist on being granted exclusivity rights to provide a certain service so as to reduce the commercial risk of their investment. However, that objective has to be balanced against the interests of consumers and the economy as a whole. For those countries where the granting of exclusivity rights is found to be needed as an incentive to private investment, it may be advisable to consider restricting competition, though on a temporary basis only (see chap. IV, "The project agreement", ____).

(b) Scope for competition in different sectors

64. Until recently, monopolistic conditions prevailed in most infrastructure sectors either because the sector was a natural monopoly or because regulatory barriers or other factors (e.g. vertically integrated structure of public service providers) prevented effective competition. However, rapid technological progress has broadened the potential scope for competition in infrastructure sectors, as briefly discussed below:

(a) *Telecommunication sector.* New wireless technology not only makes mobile telecommunication services possible, but it is also increasingly competing with fixed (wireline) services. Fibre optic networks, cable television networks, data transmission over power lines, global satellite systems, increasing computing power, improved data compression techniques, convergence between communications, broadcasting and data processing are further contributing to the breakdown of traditional monopolies and modes of service provision. As a result of these and other changes, telecommunication services have become competitive and countries are increasingly opening up the sector to free entry, while limiting access only to services that require the use of scarce public resources, such as radio frequency;

(b) *Energy sector.* In the energy sector, combined-cycle gas turbines and other technologies allowing for efficient power production on smaller scales and standardization in manufacturing of power generation equipment have led several countries to change the monopolistic and vertically integrated structure of domestic electricity markets. Increasing computing power and improved data-processing software make it easier to dispatch electricity across a grid and to organize power pools and other mechanisms to access the network and trade in electricity;

(c) *Transport sector.* Technology is in many cases also at the origin of changing patterns in the transport sector: the introduction of containers and other innovations, such as satellite communications, making it possible to track shipments across the globe, have had profound consequences on shipping, port management and rail and truck transport, while fostering the development of intermodal transport.

65. Technological changes such as these have prompted the legislatures in a number of countries to extend competition to infrastructure sectors by adopting legislation that abolishes monopolies and other barriers to entry, changes the way infrastructure sectors are organized and establishes a regulatory framework fostering effective competition. The extent to which this can be done depends on the sector, the size of the market and other factors.

2. Restructuring of infrastructure sectors

66. In many countries, private participation in infrastructure development has followed the introduction of measures to restructure infrastructure sectors. Legislative action typically begins with the abolition of rules that prohibit private participation in infrastructure and the removal of all other legal impediments to competition that cannot be justified by reasons of public interest. It should be noted, however, that the extent to which a particular sector may be opened to competition is a decision that is taken in the light of the country's overall economic policy. Some countries, in particular developing countries, might have a legitimate interest in

promoting the development of certain sectors of local industry and might thus choose not to open certain infrastructure sectors to competition.

67. For monopolistic situations resulting from legal prohibitions rather than economic and technological fundamentals, the main legislative action needed to introduce competition is the removal of the existing legal barriers. This may need to be reinforced by rules of competition (such as the prohibition of collusion, cartels, predatory pricing or other unfair trading practices) and regulatory oversight (see chap. I, "General legislative considerations", ____). For a number of activities, however, effective competition may not be obtained through the mere removal of legislated barriers without legislative measures to restructure the sector concerned. In some countries, monopolies have been temporarily maintained only for the time needed to facilitate a gradual, more orderly and socially acceptable transition from a monopolistic to a competitive market structure.

(a) Unbundling of infrastructure services

68. In the experience of some countries it has been found that vertically or horizontally integrated infrastructure companies may be able to prevent effective competition. Integrated companies may try to extend their monopolistic powers in one market or market segment to other markets or market segments in order to extract monopoly rents in those activities as well. Therefore, some countries found it necessary to separate the monopoly element (such as the grid in many networks) from competitive elements in given infrastructure sectors. By and large, infrastructure services tend to be competitive, whereas the underlying physical infrastructure often has monopolistic characteristics.

69. The separation of competitive activities from monopolistic ones may in turn require the unbundling of vertically or horizontally integrated activities. Vertical unbundling occurs when upstream activities are separated from downstream ones, for example, by separating production, transmission, distribution and supply activities in the power sector. The objective is typically to separate key network components or essential facilities from the competitive segments of the business. Horizontal unbundling occurs when one or more parallel activities of a monopolist public service provider are divided among separate companies, which may either compete directly with each other in the market (as is increasingly the case with power production) or retain a monopoly over a smaller territory (as may be the case with power distribution). Horizontal unbundling refers both to a single activity or segment being broken up (as in the power sector examples) and to substitutes being organized separately in one or more markets (as in the case of separation of cellular services from fixed-line telephony, for example).

70. However, the costs and benefits of such changes need to be considered carefully. Costs may include the costs associated with the change itself (e.g. transaction and transition costs, including the loss incurred by companies that lose benefits or protected positions as a result of the new scheme) and those resulting from the operation of the new scheme, in particular higher coordination costs resulting, for example, from more complicated network planning, technical standardization or regulation. Benefits, on the other hand, may include new investments, better or new services, more choice and lower economic costs.

(b) Recent experience in major infrastructure sectors

(i) Telecommunications

71. Unbundling has not been too common in the telecommunication sector. In some countries, long-distance and international services were separated from local services; competition was introduced in the former, while the latter remained largely monopolistic. In some of those countries that trend is now being reversed, with local telephone companies being allowed to provide long-distance services and long-distance companies being allowed to provide local services, all in a competitive context. Mandatory open access rules are common in the

telecommunication sector of those countries where the historical public service provider provides services in competition with other providers while controlling essential parts of the network.

(ii) Electricity

72. Electricity laws recently enacted in various countries call for the unbundling of the power sector by separating generation, transmission and distribution. In some cases, supply is further distinguished from distribution in order to leave only the monopolistic activity (i.e. the transport of electricity for public use over wires) under a monopoly. In those countries, the transmission and distribution companies do not buy or sell electricity but only transport it against a regulated fee. Trade in electricity occurs between producers or brokers on the one hand and users on the other. In some of the countries concerned, competition is limited to large users only or is being phased in gradually.

73. Where countries have opted for the introduction of competition in the power and gas sectors, new legislation has organized the new market structure, stipulating to what extent the market had to be unbundled (sometimes including the number of public service providers to be created out of the incumbent monopoly), or removed barriers to new entry. The same energy laws have also established specific competition rules, whether structural (e.g. prohibition of cross-ownership between companies in different segments of the market, such as production, transmission and distribution, or gas and electricity sale and distribution) or behavioural (e.g. third-party access rules, prohibition of alliances or other collusive arrangements). New institutions and regulatory mechanisms, such as power pools, dispatch mechanisms or energy regulatory bodies, have been established to make the new energy markets work. Finally, other aspects of energy law and policy have had to be amended in conjunction with these changes, including the rules governing the markets for oil, gas, coal and other energy sources.

(iii) Water and sanitation

74. The most common market structure reform introduced in the water and sanitation sector is horizontal unbundling. Some countries have created several water utilities where a single one existed before. This is particularly common in, but is not limited to, countries with separate networks that are not or only slightly interconnected. In practice, it has been found that horizontal unbundling facilitates comparison of the performance of service providers.

75. Some countries have invited private investors to provide bulk water to a utility or to build and operate water treatment or desalination plants, for example. In such vertical unbundling, the private services (and the discrete investments they require) are usually rendered under contract to a utility and do not fundamentally modify the monopolistic nature of the market structure: the plants usually do not compete with each other and are usually not allowed to bypass the utility to supply customers. A number of countries have introduced competition in bulk water supply and transportation; in some cases, there are active water markets. Elsewhere, competition is limited to expensive bottled or trucked water and private wells.

(iv) Transport

76. In the restructuring measures taken in various countries, a distinction is made between transport infrastructure and transport services. The former may often have natural monopoly characteristics, whereas services are generally competitive. Competition in transport services should be considered not only within a single mode but also across modes, since trains, trucks, buses, airlines and ships tend to compete for passengers and freight.

77. With respect to railways, some countries have opted for a separation between the ownership and operation of infrastructure (e.g. tracks, signalling systems and train stations) on the one hand and of rail transport services (e.g. passenger and freight) on the other. In such schemes, the law does not allow the track operator also to operate transport services, which are operated by other companies often in competition with each other. Other countries have let integrated companies operate infrastructure as well as services, but have enforced third-party access rights to the infrastructure, sometimes called "trackage rights". In those cases, transport companies, whether another rail line or a transport service company, have right of access to the track on certain terms and the company controlling the track has the obligation to grant such access.

78. In many countries, ports were until recently managed as public sector monopolies. When opening the sector to private participation, legislators have considered different models. Under the landlord-port system, the port authority is responsible for the infrastructure as well as overall coordination of port activities; it does not, however, provide services to ships or merchandise. In service ports, the same entity is responsible for infrastructure and services. Competition between service providers (e.g. tugboats, stevedoring and warehousing) may be easier to establish and maintain under the landlord system.

79. Legislation governing airports may also require changes, whether to allow private investment or competition between or within airports. Links between airport operation and air traffic control may also need to be considered carefully. Within airports, many countries have introduced competition in handling services, catering and other services to planes, as well as in passenger services such as retail shops, restaurants, parking and the like. In some countries, the construction and operation of a new terminal at an existing airport has been entrusted to a new operator, thus creating competition between terminals. In others, new airports have been built on a BOT basis and existing ones transferred to private ownership.

(c) Transitional measures

80. The transition from monopoly to market needs to be carefully managed. Political, social or other factors have led some countries to pursue a gradual or phased approach to implementation. As technology and other outside forces are constantly changing, some countries have adopted sector reforms that could be accelerated or adjusted to take those changing circumstances into account.

81. Some countries have felt that competition should not be introduced at once. In such cases, legislation has provided for temporary exclusivity rights, limitation in the number of public service providers or other restrictions on competition. Those measures are designed to give the incumbent adequate time to prepare for competition and to adjust tariffs, while providing the public service provider adequate incentives for investment and service expansion. Other countries have included provisions calling for the periodic revision (at the time of tariff reviews, for example) of such restrictions with a view to ascertaining whether the conditions that justified them at the time when they were introduced still prevail.

82. Another transitional measure, at least in countries with government-owned public service providers, has been the restructuring or privatization of the incumbent service provider. While the sequence between privatization and liberalization has differed, liberalization has by and large either accompanied or preceded privatization. Some countries have proceeded otherwise and have privatized companies with significant exclusivity rights, often to increase privatization proceeds. They have, however, found it difficult and sometimes very expensive to remove, restrict or shorten at a later stage the exclusive rights or monopolies protecting private or privatized public service providers.

Notes

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PRIVATELY FINANCED INFRASTRUCTURE PROJECTS

Draft chapters of a legislative guide on privately financed infrastructure projectsReport of the Secretary-GeneralAddendum

Chapter I. GENERAL LEGISLATIVE CONSIDERATIONS

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LEGISLATIVE RECOMMENDATIONS

General considerations (paras. 1-15)

(1) The law should provide the contracting authorities in the host country with the necessary power to award concessions for infrastructure development and operation. It is advisable to review existing constitutional provisions so as to eliminate undesirable restrictions to private sector participation in infrastructure development and operation, or unnecessary limitations to the use of public property by private entities and obstacles to private ownership of infrastructure.

Scope of authority to award concessions (paras. 16-25)

(2) The host country may wish to consider adopting legislative provisions that:

(a) Authorize contracting authorities in the host country, including, as appropriate, national, provincial and local authorities, to award concessions for the construction and operation of infrastructure of new infrastructure facilities or systems or for maintenance, repair, refurbishment, modernization, expansion and operation of existing infrastructure facilities and systems, or only for the management and delivery of a public service falling within their competence;

(b) Authorize the granting of concessions that extend to the entire region under the jurisdiction of the contracting authority or only to a geographical subdivision thereof, with or without exclusivity, as appropriate, in accordance with laws, regulations and policies applying to the sector concerned;

(c) Authorize the contracting authority or other agencies of the Government to transfer or make available to the concessionaire such public land or existing infrastructure that may be required for the execution of the project.

Administrative coordination (paras. 27-32)

(3) The host country may wish to consider adopting legislative provisions requiring:

(a) That contracting authorities interested in developing a privately financed infrastructure projects, within their sphere of competence conduct a preliminary assessment of its feasibility, including economic and financial aspects such as expected economic advantages of the project, estimated cost and potential revenue anticipated from the operation of the infrastructure facility, as well as the environmental impact of the project;

(b) That the contracting authority concerned review existing statutory or regulatory requirements relating to the operation of infrastructure facilities of the type proposed with a view to identifying the main governmental bodies that have to give approvals, licences or authorizations or whose input will be otherwise required for the implementation of the project and take the necessary measures for coordinating their input to the proposed project.

Authority to regulate infrastructure services (paras. 33-55)

- (4) The host country may wish to consider adopting legislative provisions for the purpose of:
 - (a) Separating operational and regulatory functions and entrusting regulatory competence to legally and functionally independent bodies;
 - (b) Granting the regulatory body a sufficient level of autonomy to ensure that its decisions are taken without political interference or inappropriate pressures from infrastructure operators and public service providers.
- (5) The host country may wish to consider adopting legislative provisions that:
 - (a) Require the publication of rules governing regulatory procedures;
 - (b) Require that regulatory decisions state the reasons on which they are based and be accessible to interested parties through publication or other means;
 - (c) Provide for appeal procedures against decisions of regulatory bodies and adequate remedies to protect public service providers from arbitrary decisions of regulatory bodies.

NOTES ON LEGISLATIVE RECOMMENDATIONS

A. General remarks

1. The successful implementation of privately financed infrastructure projects requires a legal framework that provides contracting authorities in the host country with the necessary power to award concessions for infrastructure development and operation. According to the legal and political traditions of the country, this power may be derived from existing constitutional rules, laws, regulations or case law, or it may need to be established by new provisions. This section deals with some general issues which domestic legislatures may wish to consider when setting up the legal framework for privately financed infrastructure projects. Firstly, it is important for the legislature to consider the possible implications that the constitutional law of the host country may have for the implementation of these projects. Secondly, a choice has to be made regarding the level and type of instrument or instruments that need to be enacted and their scope of application. Lastly, it is important to consider how privately financed infrastructure projects are received in the legal tradition of the country, in particular which legal regime would apply to them.

1. Constitutional law and privately financed infrastructure projects

2. The constitutional law of a number of countries refers generally to the duty of the State to ensure the provision of public services. Some of them list the infrastructure and services sectors which come under the responsibility of the State, while in others the task of identifying those sectors is delegated to the legislator. Under some national constitutions, the provision of certain public services is reserved exclusively to the State or to specially created public entities. Other constitutions, however, authorize the State to award concessions to private entities for the development and operation of infrastructure and the provision of public services. In some countries, there are limitations to the participation of foreigners in certain sectors, or requirements that the State should participate in the capital of the companies providing public services.

3. For countries wishing to promote private investment in infrastructure it is important to review existing constitutional rules so as to identify possible restrictions to the implementation of privately financed infrastructure projects. In some countries, privately financed infrastructure projects have been delayed by uncertainties regarding the extent of the State's authority to award them. Sometimes, concerns that those projects might contravene constitutional rules on State monopolies or on the provision of public services have led to judicial disputes, with negative impact on the implementation of the projects.

4. It is further important to take into account constitutional rules relating to the ownership of land or infrastructure facilities. The constitutional law of some countries contains limitations to private ownership of land and certain means of production. In other countries, private property is recognized, but the constitution declares all or certain types of infrastructure to be State property. Prohibitions and restrictions of this nature can be an obstacle to the execution of projects that entail private operation, or private operation and ownership, of the relevant infrastructure.

5. Irrespective of the choice made by the Government regarding the ownership of infrastructure, it is important for a country wishing to attract private investment in infrastructure to ensure that the State is authorized to make available to the concessionaire such land or existing infrastructure as may be required for the execution of infrastructure projects. In some countries it has been found necessary to amend the constitution so as to provide the State with that authority.

2. Choice of a legislative approach

6. Legislation frequently plays a central role in promoting private investment in public infrastructure projects. The law typically embodies a political commitment, provides specific legal rights and may represent an important guarantee of stability of the legal and regulatory regime. In most countries the implementation of privately financed infrastructure projects was in fact preceded by legislative measures setting forth the general rules under which those projects are awarded and executed.

7. In some countries, as a matter of legislative practice, it has been considered appropriate to adopt specific legislation regulating the execution and operation of one or more individual projects. In other countries with a well-established tradition of awarding concessions to the private sector for the provision of public services, the State is authorized by general legislation to award to the private sector any activity carried out by the public sector which has an economic value that makes such activity capable of being exploited by private entities. General legislation of this type creates a framework for providing a uniform treatment to issues that are common to privately financed projects in different infrastructure sectors. Countries that consider it desirable to adopt general legislation may wish to determine what issues are suitable for being dealt with at this legislative level, and what issues should be left for specific legislation, regulations or for the project agreement.

8. By its very nature, general legislation is normally not suitable to address all the particular requirements of different sectors. This is why the provision of certain public services is in several countries subject to special legislation governing specific infrastructure sectors (e.g. telecommunications, power generation and distribution, road and railway transportation). One of the arguments in favour of the adoption of sector-specific legislation, even in countries that have adopted general legislation addressing cross-sectoral issues, is that it allows the legislator to take into account the market structure in formulating rules governing the activities of service providers in each infrastructure sector (see above, "Introduction and background information on privately financed infrastructure projects", ____).

9. Sector-specific legislation typically sets forth the policy of the Government for the sector concerned, lays down the mechanisms for implementing such policy and provides the general rules for the provision of the relevant services. In many countries, sector-specific legislation was adopted at a time when a significant portion, or even the entirety of the national infrastructure constituted State monopolies. Recent national strategies for promoting private sector investment in infrastructure were often based on the results of extensive studies that analysed questions such as the extent of competition that could be introduced in the market as a whole or within specific segments of it, and considered the potential economic costs and expected benefits of abolishing legal monopolies or retaining them in full or in part (see, "Introduction and background information on privately financed

infrastructure projects", ____). For countries interested in promoting private sector investment in infrastructure it is advisable to review existing sector-specific legislation so as to ascertain their suitability for privately financed infrastructure projects.

10. Sector-specific legislation may further play an important role in establishing a framework for the regulation of individual infrastructure sectors (see below, paras.33-55). Legislative guidance is particularly useful in countries at the initial stages of setting up or developing national regulatory capacities. Such legislation is also useful to reassure the lenders and the concessionaire that the regulators do not have unlimited discretion in the exercise of their functions, but are bound by the parameters provided by the law. However, it is generally advisable to avoid rigid or excessively detailed legislation, which in most cases would not be adequate to the long-term nature of privately financed infrastructure projects.

11. Each instrument has its specificity which makes it more or less appropriate for given circumstances. Legislative provisions may be difficult to change. Many countries have used them to establish the general principles for the organization of infrastructure sectors and the basic policy, institutional and regulatory framework. However, the law may not be the best instrument to set detailed technical and financial requirements. Many countries have preferred to enact regulations setting forth more detailed rules to implement the general provisions of domestic laws on privately financed infrastructure projects. Regulations are found to be easier to adapt to a change in environment, whether the change results from the transition to market-based rules or from external developments, such as new technologies or changing economic or market conditions. Whatever the instrument used, clarity and predictability are of the essence. However, this does not imply that all matters have to be clearly settled up-front.

3. Legal regime of privately financed infrastructure projects

12. In some legal systems, in particular those belonging to the civil law tradition, the provision of public services is governed by a body of law known as "administrative law", which covers a wide range of State functions. In most of those countries there are well-defined concepts of administrative law that may cover certain forms of infrastructure projects, such as "public works concession", "public services concession", or "delegations", "licences" or "permissions" for the provision of certain forms of public services. Various rights and obligations of the parties may derive from statutory provisions, judicial precedent or general principles of law, according to the type of the project and the nature of the instrument of award (e.g. whether a bilateral agreement or a unilateral act).

13. In some of those legal systems, for instance, the Government generally has the right to revoke administrative contracts or to modify their scope and terms, for reasons of public interest, usually subject to compensation of loss caused to, or additional cost incurred by, its contractors. Additional rights of the Government might include extensive monitoring and inspection rights, as well as the right to impose sanctions on the private operator for failure to perform (see chapter V, "Infrastructure development and operation", ____). In some countries, there are special provisions for the settlement of disputes arising out of Government contracts, and there may be limitations to the right of governmental agencies to agree on non-judicial procedures for settlement of disputes (see

chapter VIII, "Settlement of disputes", ____). At the same time, some legal systems recognize certain implied conditions in all Government contracts that afford a certain level of protection to Government contractors, such as the right to review the terms of the contract following unforeseen changes in the circumstances for the purpose of restoring its economic and financial balance (see chapter V, "Infrastructure development and operation", ____).

14. The existence of a special legal regime applicable to infrastructure operators and public service providers is not limited to the legal systems referred to above. In several countries belonging to the common law tradition special rules have been developed for Government contracts, often through the extensive use of standard forms and terms. Those special rules typically give the Government certain powers of termination or modification balanced by an obligation to indemnify the contractor against the damage sustained by reliance on the contract. In some common law jurisdictions detailed rules have been developed to govern the activities of operators of public utilities (e.g. telecommunications, railways, electricity).

15. In countries where Government contracts are subject to a special regime, it may be advisable for the legislature to review the adequacy of the existing regime for privately financed infrastructure projects and to identify possible difficulties that might result from its application. For purposes of transparency and to avoid doubts by potential foreign as well as domestic investors, it may be useful to incorporate into special legislation pertaining to privately financed infrastructure projects those rights and obligations that are implied or are not treated systematically in the legal system and which are found to be appropriate in connection with those projects (see chapter V, "Infrastructure development and operation", ____). By the same token, the enactment of general legislation may provide an opportunity for introducing new rules to facilitate privately financed infrastructure projects or to exclude the application of those rules of law which are found to pose obstacles to their execution.

B. Scope of authority to award concessions

16. The implementation of privately financed infrastructure projects may require the enactment of special legislation or regulations authorizing the State to entrust the provision of public services to private entities or decentralized entities wholly or partially owned by the State. Besides being sometimes needed to satisfy national constitutional and other requirements, the enactment of express legislative authorization may be an important measure to foster the confidence of potential investors, national or foreign, in a national policy to promote private sector investment in infrastructure. In many countries, legislative provisions on the authority to grant concessions for infrastructure projects are not limited to identifying the agencies of the Government which are vested with such authority. They would typically determine the scope of concessions that may be granted by the contracting authorities and define the ownership regime of the assets related to the project.

1. Authorized agencies and relevant fields of activity

17. In some legal systems where the State is directly responsible for the provision of public services this function may not be delegated without prior legislative authorization. For those

countries that wish to attract private investment in infrastructure, it is therefore particularly important that the law states clearly the authority of the Government to entrust to entities other than governmental agencies the right to provide certain public services and to charge a price for them. Such a general provision in the enabling legislation may be particularly important in those countries where public services are State monopolies, or where it is envisaged to engage private entities to provide certain services that used to be available to the public free of charge. In some countries, the absence of prior legislative authorization has given rise to judicial disputes challenging the concessionaire's authority to require the payment of a price for the services provided.

18. Furthermore, where general legislation is adopted, it is advisable to indicate clearly the agencies or levels of government competent to award infrastructure projects to the private sector. It may be useful to consider the extent of powers that may be needed by authorities other than the central Government to carry out projects falling within their purview. For clarity purposes, it may be also advisable to identify in such general legislation those fields of activity in which concessions may be awarded. These provisions may be instrumental to ensuring an adequate level of administrative coordination (see further below, paras. 26-32).

2. Purpose and scope of concessions

19. It may be useful for the law to define the nature and purpose of privately financed infrastructure projects for which concessions may be awarded in the host country. One possible approach may be to define the various categories of projects according to the extent of the rights and obligations assumed by the concessionaire (e.g. "build-operate-transfer", "build-own-operate", "built-transfer-operate", "build-transfer"). However, given the wide variety of schemes that may come into play in connection with private investment in infrastructure, it may be difficult to provide exhaustive definitions of all of them. As an alternative, the law could generally provide that concessions may be awarded for the purpose of entrusting an entity, private or public, with the obligation to carry out infrastructure works and deliver certain public services, in consideration for the right to charge a price for the use of the facility or premises or for the service or goods it generates, or for other payment or remuneration agreed to by the parties. The law could further clarify that concessions may be awarded for the construction and operation of a new infrastructure facility or system or for maintenance, repair, refurbishment, modernization, expansion and operation of existing infrastructure facilities and systems, or only for the management and delivery of a public service.

20. Another important issue concerns the nature of the rights vested upon the concessionaire. One of the central questions arising in connection with privately financed infrastructure projects is whether the right to provide the service is exclusive or whether the project company will face the competition from other infrastructure facilities or service providers. Exclusivity may concern the right to provide a service in a particular geographical region (e.g. a communal water distribution company) or embrace the whole territory of the country (e.g. a national railway company); it may relate to the right to supply one particular type of goods or services to one particular customer (e.g. a power generator being the exclusive regional supplier to a power transmitter and distributor) or to a limited group of customers (e.g. a national long-distance telephone carrier providing connections to local telephone companies).

21. The decision whether or not to grant exclusivity rights to a certain project or category of projects should be taken in the light of the host country's policy for the sector concerned. As discussed earlier, the scope for competition varies considerably in different infrastructure sectors. While certain sectors, or segments thereof, have the characteristics of natural monopolies, in which case open competition is usually not an economically viable alternative, other infrastructure sectors have been successfully opened to free competition (see "Introduction and background information on privately financed infrastructure projects", ____).

22. Therefore, it is desirable to deal with the issue of exclusivity in a flexible manner. Rather than excluding or prescribing exclusive concessions, it may be preferable for the law to authorize the Government to grant exclusive concessions when it is deemed to be in the public interest, such as in cases where the exclusivity is justified for the purpose of ensuring the technical or economical viability of the project. The contracting authority may be required to state the reasons for granting an exclusive concession for each particular case. Such general legislation may be supplemented by sector-specific laws regulating the issue of exclusivity in a manner suitable for each particular sector.

3. Ownership and use of infrastructure

23. A number of countries have provisions on the preservation and protection of State property, including special procedures and authorizations required for transferring the title to such property to private entities or granting to private entities the right to use governmental property. Whatever choice is made by the Government regarding the ownership of the infrastructure facility to be built, modernized or rehabilitated, it is important to ensure that the contracting authority has sufficient powers to transfer or make available to the project company, as appropriate, any land or existing infrastructure required for the execution of the project for a period not less than the duration of the project agreement.

24. The ownership regime for a particular project may be the result of practical considerations, such as the operational life of the infrastructure or the interest of the Government in retaining title to it. Moreover, in some projects the parties may wish to distinguish between assets that are to be owned by or reverted to the Government at the end of the concession period, and other assets acquired by the concessionaire during that period and which remain the concessionaire's property. In any event, the concessionaire would need assurances that its rights in respect of the project assets, no matter what form they may take, are based on sufficient legislative authority and that it will be able to enforce them against third parties. The same concern will be shared by the lenders and other project investors. Furthermore, in view of the legal restrictions that apply in many countries to the use of public property by private entities, the Government may necessitate prior legislative authorization to allow the concessionaire to use any additional public property that may be needed for the execution of the project, such as adjoining land, roads and other facilities.

25. Therefore, it is advisable that the relevant law clarify the nature of the property rights, if any, that may be granted to the concessionaire, taking into account the type of infrastructure concerned. Furthermore, it might be useful for the law to authorize the Government to grant to the concessionaire the right to use land, roads and other supporting facilities not directly related to the

project, as required for the construction and operation of the infrastructure, under the terms and conditions to be provided in the project agreement.

C. Administrative coordination

26. Depending on the administrative structure of the host country, privately financed infrastructure projects may require the involvement of several governmental agencies, at various levels of Government. For instance, the competence to lay down regulations and rules for the activity concerned may rest in whole or in part with a governmental agency at a level different from the one that is responsible for providing the relevant service. It may also be that both the regulatory and the operational functions are combined in one entity, but that the authority to award Government contracts is centralized in a different governmental agency. For projects involving foreign investment, it may also happen that certain specific competences may fall within the mandate of the agency of the Government that is responsible for approving foreign investment proposals.

1. Coordination of preparatory measures

27. One important measure to ensure the successful implementation of privately financed infrastructure projects is the requirement that the relevant governmental agency conduct a preliminary assessment of the project's feasibility, including economic and financial aspects such as expected economic advantages of the project, estimated cost and potential revenue anticipated from the operation of the infrastructure facility and the environmental impact of the project. The preliminary conclusions reached at this stage will play a crucial role in conceiving the type of private sector involvement that is sought for the implementation of the project, for instance, whether the infrastructure facility will be owned by the Government and temporarily operated by the private entity, or whether the facility will be owned and operated by the project company.

28. Following the identification of the future project, it is for the Government to establish its relative priority and to assign human and other resources for its implementation. At that point, it is desirable that the Government review existing statutory or regulatory requirements relating to the operation of infrastructure facilities of the type proposed with a view to identifying the main governmental bodies whose input will be required for the implementation of the project. It is also important, at this stage to consider the measures that may be required in order for the contracting authority and the other governmental agencies involved to perform the obligations they may reasonably anticipate in connection with the project. For instance, the Government may need to make advance budgeting arrangements to enable it to meet financial commitments that extend over several budgetary cycles, such as long term commitments to purchase the project's output (see below, chapter IV, "The project agreement", ____). Furthermore, a series of administrative measures may be needed to implement certain forms of support provided to the project, such as tax exemptions and customs facilitation (see chapter II, "Government support", ____), and the time required may be considerable.

2. Arrangements for facilitating the issuance of licences and permits

29. The legislation may play a useful role in facilitating the issuance of approvals and licences that may be needed in the course of a project (such as licences under foreign exchange regulations; licences for the incorporation of the concessionaire; authorizations for the employment of foreigners; registration and stamp duties for the use or ownership of land; importation licences for equipment and supplies; construction licences; licences for the installation of cables or pipelines; licences for bringing the facility into operation; spectrum allocation for mobile communication). The required licences and authorizations may fall within the competence of various organs at different levels of the administration and the time required for their issuance may be significant, particularly when the approving organs or offices were not originally involved in conceiving the project or negotiating its terms.

30. By the time the project agreement is signed, the concessionaire will normally have spent considerable time and invested significant sums in the project (e.g. preparation of feasibility studies, engineering design and other technical documents; preparation of bidding documents and participation in the bidding process; negotiation of the project agreement, loan agreements and other project-related contracts; hiring consultants and advisers). The possibility of not obtaining the licences needed for the construction of the facility may dissuade serious investors from competing for the award of the project. Furthermore, delay in bringing an infrastructure project into operation as a result of missing licences is likely to compromise the project's financial viability or cause considerable loss to its investors. Where the additional financial cost cannot be recovered by means of an extension of the concession period, or by raising the tariffs or charging higher prices, the concessionaire might turn to the Government for redress or support. The consequence would often be an increase in the cost of the project and in its cost to the public.

31. Thus, an early assessment of licences needed for a particular project may help to avoid delay in the implementation phase. A possible measure to enhance the coordination in the issuance of licences and approvals might be to entrust one organ with the authority to receive the applications for licences, to transmit them to the appropriate agencies and monitor the issuance of all licences listed in the request for proposals and other licences that might be introduced by subsequent regulations. The law may also authorize the relevant agencies to issue provisional licences and provide a time period beyond which those licences are deemed to be granted unless they are rejected in writing.

32. However, it should be noted that the distribution of administrative authority among various levels of government (e.g. local, regional and central) often reflect fundamental principles of a country's political organization. Therefore, there are instances where the Government would not be in a position to assume responsibility for the issuance of all licences or to entrust one single body with such a coordinating function. In those cases, it is advisable to consider alternative measures to counter the possibility of delay that might result from such distribution of administrative authority, such as, for instance, measures intended to make the process of obtaining licences more transparent and efficient. Furthermore, the Government might wish to consider providing some assurance that it will as much as possible assist the concessionaire in obtaining licences required by domestic law, for instance by providing information and assistance to bidders regarding the required licences to be

obtained, as well as the relevant procedures and conditions. From a practical point of view, in addition to coordination among various levels of government and various governmental departments, there is a need for ensuring consistency in the application of criteria for the issuance of licences and for the transparency of the administrative process.

D. Authority to regulate infrastructure services

33. The provision of certain public services is in a number of countries subject to a special regulatory regime. The regulatory regime in a given country and sector defines the rights and obligations of service providers, consumers, regulatory bodies and the Government. This framework consists of substantive rules, procedures, instruments and institutions and it represents an important instrument to implement the governmental policy for the sector concerned (see "Introduction and background information on privately financed infrastructure projects", ____). Depending on the institutional structure of the country concerned and on the allocation of powers between different levels of Government, provincial or local legislation may govern some infrastructure sectors, in full or concurrently with national legislation.

34. Regulation of infrastructure services involves a wide range of general and sector-specific issues, which may vary considerably according to the social, political, legal and economic reality of each host country. While occasionally discussing some of the main regulatory issues that are encountered in a similar context in different sectors (see, for instance, chapter V, "Project execution", ____), the *Guide* is not intended to exhaust the legal or policy issues arising out of the regulation of various infrastructure sectors.

35. The *Guide* assumes that the host country has in place the proper institutional and bureaucratic structures and human resources necessary to the implementation of privately financed infrastructure projects. Nevertheless, as a contribution to domestic legislatures considering the need for, and desirability of, establishing regulatory bodies for monitoring the provision of public services, this section discusses some of the main institutional and procedural issues that arise in that connection. The discussion contained in this section is illustrative of different options that have been used in domestic legislative measures to set up a regulatory framework for privately financed infrastructure projects, but the *Guide* does not thereby advocate the establishment of any particular model or administrative structure. Practical information and technical advice may be obtained from international financial institutions which carry out programmes to assist their member countries in setting up an adequate regulatory framework (such as the World Bank and the regional development banks).

1. Regulatory bodies

36. The term "regulatory bodies" refers to the institutional mechanisms required to implement and monitor the rules governing the activities of infrastructure operators. Because the rules applicable to infrastructure operation often allow for a degree of discretion, a body is required to interpret and apply them, monitor compliance, impose sanctions, and settle disputes arising out of the implementation of the rules. The specific regulatory tasks and the amount of discretion they involve will be determined by the rules in question, which can vary widely.

(a) Sectoral attributions of regulatory bodies

37. Regulatory responsibilities may be organized on a sectoral or cross-sectoral basis. Countries that have opted for a sectoral approach have in many cases decided to place closely linked sectors or segments thereof under the same regulatory structure (e.g. a common regulatory body for power and gas or for airports and airlines). Other countries have organized regulation on a cross-sectoral basis, in some cases with one regulatory entity for all infrastructure sectors, and in others with one entity for utilities (water, power, gas, telecommunications) and one for transport. In some countries the attributions of regulatory bodies might also extend to several sectors within a given region.

38. Regulatory bodies whose competence is limited to a particular sector usually foster the development of technical, sector-specific expertise. Sector-specific regulation may facilitate the development of rules and practices that are tailored to the needs of the sector concerned. However, the decision between sector-specific and cross-sectoral regulation depends in part on the country's regulatory capacity. Countries with limited expertise and experience in infrastructure regulation may find it preferable to reduce the number of independent structures and try to achieve economies of scale.

(b) Institutional mechanisms

39. The range of institutional mechanisms for the regulation of infrastructure sectors varies greatly. While there are countries which entrust regulatory functions to organs of the Government (e.g. the concerned ministries or departments), other countries have preferred to establish autonomous regulatory bodies, separate from the Government. Some countries have decided to subject certain infrastructure sectors to autonomous and independent regulation while leaving others under ministerial regulation. Sometimes, powers may also be shared between an autonomous regulatory body and the Government, as is often the case with respect to licensing. From a legislative perspective, it is important to devise institutional arrangements for the regulatory functions which ensure to the regulatory body an adequate level of efficiency, taking into account the political, legal and administrative tradition of the country.

40. The efficiency of the regulatory regime is in most cases a function of the objectiveness with which regulatory decisions are taken. This, in turn, requires that regulatory bodies should be able to take decisions without interference or inappropriate pressures from infrastructure operators and public service providers. To that effect, legislative provisions in several countries require the independence of the regulatory decision making process. In order to achieve the desired level of independence it is advisable to separate the regulatory functions from operational ones by removing any regulatory functions that may still be vested with the public service providers and entrust them to a legally and functionally independent entity. Regulatory independence is supplemented by provisions to prevent conflicts of interest, such as prohibitions for staff of the regulatory body to hold mandates, accept gifts, enter into contracts or have any other relationship (directly or through family members or other intermediaries) with regulated companies, their parents or affiliates.

41. This leads to a related issue, namely the need to minimize the risk of decisions being made or influenced by a body that is also the owner of enterprises operating in the regulated sector, or a

body acting on political rather than technical grounds. In some countries it was felt necessary to provide the regulatory body with a certain degree of autonomy vis-à-vis the political organs of Government. Independence and autonomy should not be considered solely on the basis of the institutional position of the regulatory function, but also on the basis of its functional autonomy (i.e. the availability of sufficient financial and human resources to discharge their responsibilities adequately).

(c) Mandate of regulatory bodies

42. The law setting up a regulatory mechanism often stipulates a number of general objectives that should guide the actions of regulatory bodies, such as the promotion of competition, the protection of users' interests, the satisfaction of demand, the efficiency of the sector or the public service providers, their financial viability, the safeguarding of the public interest or of public service obligations, and the protection of investors' rights. Having one or two overriding objectives helps clarify the mandate of regulatory bodies and establish priorities among sometimes conflicting objectives. A clear mandate may also increase a regulatory body's autonomy and credibility.

(d) Powers of regulatory bodies

43. Regulatory bodies may have decision-making powers, advisory powers or purely consultative powers or a combination of these different levels of powers depending on the subject matter. In some countries, regulatory bodies were initially given limited powers, which were expanded later as the regulatory bodies established a track record of independence and professionalism. The legislation often specifies which powers are vested with the Government and which ones with a regulatory body. Clarity in this respect is important to avoid unnecessary conflicts and confusion. Investors, as well as consumers and other interested parties, should know to whom to turn with various requests, applications or complaints.

44. Selection of public service providers, for example, is in many countries a process involving the Government as well as the regulatory body. If the decision to award a project involves broad judgment of a political rather than technical nature, which may often be the case in the context of infrastructure privatization, final responsibility often rests with the Government. If, however, the award criteria are more technical, as may be the case with a liberal licensing regime for power generation or telecommunications services, many countries entrust the decision to an independent regulatory body. In other cases, the Government may have to ask the regulatory body's opinion prior to awarding a concession. On the other hand, some countries exclude direct involvement of regulatory bodies in the award process on the basis that it could affect the way they later regulate the provision of the service concerned.

45. The jurisdiction of regulatory bodies normally extends to all enterprises operating in the sectors they regulate, with no distinction between private and public enterprises. The use of some regulatory powers or instruments may be limited by law to the dominant public service providers in the sector. A regulatory body may, for example, have price policing powers only vis-à-vis the incumbent or dominant public service provider, while new entrants may be allowed to set prices freely.

46. The matters on which regulatory bodies have to pronounce themselves range from normative responsibilities (e.g. rules on the award of concessions, conditions for certification of equipment) to the actual award of concessions; the modification of such instruments; the approval of contracts or decisions proposed by the regulated entities (e.g. a schedule or contract on network access); the definition and monitoring of an obligation to provide certain services; the oversight over public service providers (in particular compliance with licence conditions, norms, performance targets); tariff setting or adjustments; vetting of subsidies, exemptions or other advantages that could distort competition in the sector; sanctions; and dispute settlement.

(e) Composition of regulatory bodies and their staff

47. When setting up a regulatory body, a few countries have opted for a regulatory body comprised of a single officer, whereas most others have preferred a regulatory commission. A commission may provide greater safeguards against undue influence or lobbying and may limit the risk of rash regulatory decisions. A one-person regulatory body, on the other hand, may be able to reach decisions faster and may be held more accountable. To improve the management of the decision making process in a regulatory commission, the number of members is often kept small (typically three or five members). Even numbers are often avoided to prevent a deadlock, though the chairman could have a casting vote.

48. To increase the regulatory body's autonomy, different institutions may be involved in the nomination process. In some countries regulatory bodies are appointed by the Head of State based on a list submitted by parliament; in others the executive branch of the Government appoints the regulatory body but subject to confirmation by parliament or upon nominations submitted by parliament, user associations or other bodies. Minimal professional qualifications are often required of regulatory bodies, as well as the absence of conflicts of interest that might disqualify them for the function. Mandates of members of regulatory commissions may be staggered in order to prevent total turnover and appointment of all members by the same administration; staggering also promotes continuity in regulatory decision making. Mandates are often for a fixed term, may be non-renewable and may be terminated before the expiry of the term for limited reasons only (such as crime conviction, mental incapacitation, gross negligence or dereliction of duty). Regulatory bodies are often faced with experienced lawyers, accountants and other experts working for the regulated industry and need to be able to acquire the same level of expertise, skills and professionalism, either in-house or by hiring outside advisers as needed. They are often allowed to subcontract to outside experts certain regulatory tasks short of the ultimate regulatory decision.

(g) Budget of the regulatory body

49. Stable funding sources are critical in order for the regulatory body to function adequately. In many countries, the budget of the regulatory entity is funded by fees and other levies on the regulated industry. Fees may be set as a percentage of the turnover of the public service providers, or be levied for the award of licences, concessions or other authorizations. In some countries, the entity's budget is complemented as needed by budget transfers provided in the annual finance law. However, this may create an element of uncertainty that may reduce the regulatory body's autonomy.

2. Regulatory process and procedures

50. The regulatory framework typically includes procedural rules governing the way the institutions in charge of the various regulatory functions have to exercise their powers.

(a) Procedures

51. The credibility of the regulatory process requires transparency and objectivity, irrespective of whether regulatory authority is exercised by a Government department or minister or by an autonomous regulatory body. Rules and procedures should be objective and clear so as to ensure fairness and impartiality. For transparency purposes, the law should require that they be published. Regulatory decisions should state the reasons on which they are based and should be made accessible to interested parties, through publication or other appropriate means.

52. Transparency may be further enhanced, as required by some laws, by the publication by the regulatory body of an annual report on the sector, including, for example, the decisions taken during the exercise, the disputes that have arisen and the way they were settled. Such annual report may also include the accounts of the regulatory body and an audit thereof by an independent auditor. Legislation in many countries further requires that this annual report be submitted to a committee of parliament.

53. Regulatory decisions may impact on the interests of diverse groups, including the concerned public service provider, its current or potential competitors, and business or non-business users. In many countries, the regulatory process includes consultation procedures for major decisions or recommendations. In some countries, this consultation takes the form of public hearings, in others of consultation papers on which comments from interested groups are solicited. Some countries have also established consultative bodies comprised of users and other concerned parties and require that their opinion be sought before major decisions and recommendations are made. To enhance transparency, comments, recommendations or opinions resulting from the consultation process may have to be published or made publicly available.

(b) Sanctions and appeals

54. In many countries, the law gives regulatory bodies some coercive or punitive powers. Such powers may include the authority to modify, suspend or withdraw a concession; the right to set the terms of contracts between public service providers (e.g. interconnection or access agreements); to issue injunctions and orders to public service providers; to impose civil penalties including penalties for any delay in implementing the regulatory body's decision, and to initiate criminal or other court procedures.

55. Legislators have often provided for appeal procedures against decisions of a regulatory body. Appeals procedures are an essential element to protect public service providers against arbitrary decisions by regulatory bodies. However, in order to prevent the regulatory uncertainty that may arise from appeals intended primarily to delay the effect of regulatory decisions, the laws of many countries limit the causes that give ground to appeal. It is therefore desirable to strike a balance

between the protection of legitimate rights of the public service providers and the efficiency of the regulatory system. It is often essential that decisions be made quickly. For instance, withdrawal of a competitor's access to an infrastructure network could drive the competitor into bankruptcy if the matter cannot be resolved expeditiously. Where the right to appeal is granted, it should be to a body that has the required skills and expertise to adjudicate the matter. Some laws give public service providers the right to appeal against certain decisions of the regulatory body to the country's competition authority, others to administrative tribunals or judicial courts.

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